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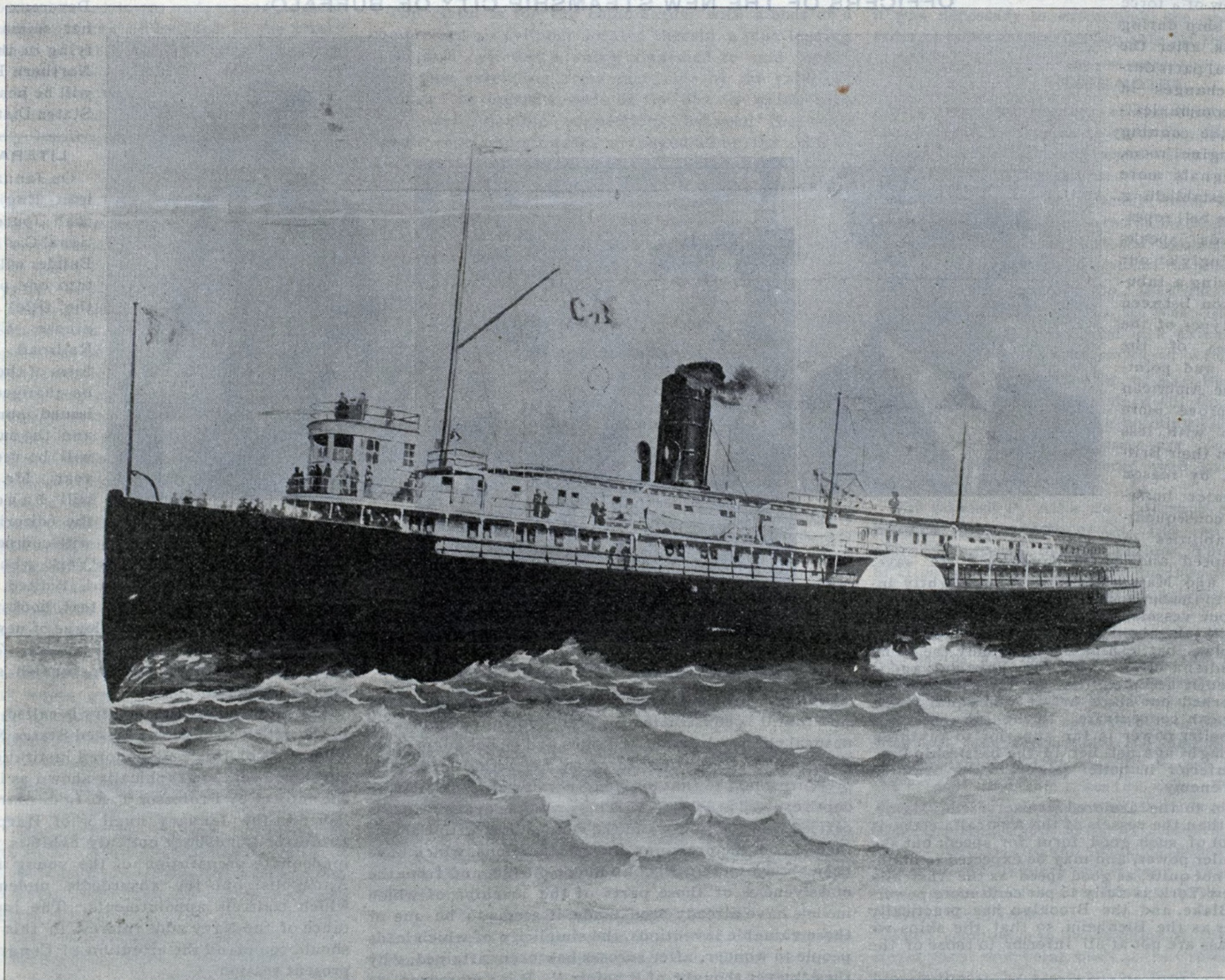
LAUNCH OF THE CITY OF BUFFALO.

The new Cleveland & Buffalo liner City of Buffalo, building by the Detroit Dry-Dock Co., was launched Tuesday afternoon. She was towed to Detroit, where her cabin will be fitted in.

The City of Buffalo is the largest and most carefully built sidewheel steamer on the Great Lakes. She is 308

each wheel weighing 58 tons. The six boilers are of the Scotch type, 12½ by 12 feet; when filled with water the steam battery will weigh 500 tons. The main shafts are 29 feet long by 24 inches in diameter, and weigh over 18 tons each. The new boat has 50 per cent more power than any other side-wheeler on the lakes, and is expected to make the run between Cleveland and Buffalo in eight

Captain John Edwards needs no introduction on the lakes, but is noted for his good judgment in handling a boat, and for his uniform politeness and kind consideration for passengers and crew. His connection with the line has been one very important feature contributing to the popularity of the line. Engineer J. G. Randall has had long experience in his line, and was selected by



C. & B. STEAMER CITY OF BUFFALO.

feet long over all, and 296 feet between perpendiculars, by 75 feet wide over all and 17 feet 4 inches depth. There are eleven water-tight compartments. The engine is of the compound beam type, the high pressure being 52 inches, and the low pressure cylinder being 80 inches in diameter by 12 feet stroke. The wheels are of the Clyde feathering type, with steel blades carefully fitted,

hours, with a load of 800 tons of freight and the full quota of passengers. The general arrangement of the boat is very similar to that of other side-wheel steamers, with the exceptional improvements heretofore noted at some length in former issues of the RECORD.

The officers and crew of the new boat will be in the main the same as were on the State of Ohio, last season.

General Manager Newman, when the line was started, for his high capabilities and perfect reliability.

Purser Archie D. McLachlan and Steward W. H. Thorpe have been associated for a number of years. They were for some time connected in the same capacities on the steamer City of Alpena (now State of Ohio)

(CONTINUED ON PAGE 10.)

NAVAL FIGHTING IN THE NEXT WAR.

The daily press has been so full of war surmises of late that possibly the public is becoming tired of the subject. But the series of lectures written during the last summer by Lieut. John R. Edwards, of the naval engineer corps, which are now appearing in the Sunday New York World, cannot fail to excite the warmest interest and the closest attention.

The problems discussed at the war college related to the maneuvering of the navy of the United States in the event of an attack upon the New England coast by a superior fleet of English ships. These plans were in the form of lectures, in which the writers, with full knowledge of the powers of our various vessels, discussed all the intricate phases of the problem. Lieut. Edwards, in his articles, so mercilessly exposed weak spots in our present organization of the navy that they raised a storm in the service which has not yet subsided. Every effort was made to prevent these lectures from reaching the public, but after an appeal to Secretary Herbert, the World printed the first of these lectures in its issue of December 15. Lieut. Edwards calls attention to some points which have heretofore been criticized by commanders in reference to their own vessels; and in addition he gives a number of valuable hints which the navy department will do well to utilize immediately. Among these are a more convenient disposition of the coal bunkers, which can be altered and much improved at moderate cost; dispensing with deck pumps, which are absolute and take up too much room; some changes in drill which will allow of a force to patrol the ship during battle, to look after the vital mechanical parts during action; changes in methods of communicating between the conning tower and engine room, making the signals more simple, and establishing the old reliable bell ropes. Lieut. Edwards speaks very encouragingly of our new ships, giving a tabulated comparison between these and the types of the various classes of the British navy, and pointing out how the American vessels will prove more efficient, even with less armament than their British opponents, by reason of their greater horsepower, and consequently increased abilities in the line of speed and quick handling. He says:

The Indiana and Massachusetts are but slightly inferior actually to the battleships of the Royal Sovereign class; but as our vessels are of considerable less displacement it will take about 20 per cent more power to give the first-class battleships of the enemy the same speed as the Indiana class. This they have not; and it may be confidently accepted that so far as sustained speed is concerned our ships are at least equal to the best the enemy can concentrate. In the Iowa we have a ship that in boiler power is far superior to anything that can be brought against her in the battleship line, and is only inferior in boiler power to the armored cruisers of the enemy.

Coming down to the armored cruisers, the Maine, though larger than the vessels of the Australia class, is shorter, and not of such good form for speed; but she has greater boiler power, and may be expected to maintain nearly, if not quite, as good speed as the Australia class. The New York is fully 15 per cent more powerful than the Blake, and the Brooklyn has practically the same power as the Blenheim, so that the ships we have of this class are not at all inferior to those of the enemy.

Coming down to the protected cruisers it will be seen that the Columbia and Minneapolis have full 75 per cent more of boiler power than the first-class cruisers of the Edgar class, and while they will be of greater displacement when fully loaded they are, in point of speed and endurance, unapproachable by any of the enemy's fleet. The Olympia, though smaller than any of the hostile first-class cruisers, has greater boiler power than any of them, and is therefore capable of doing any duty in scouting or raiding that could be expected of a ship in possession of the enemy; and owing to the superior design of her boiler she could do this much

more economically than could the ships of the enemy.

It will be particularly noticed that in the three types of vessels in which the plans were purchased abroad, we have not that marked superiority in horse-power over our transatlantic cousins.

The lieutenant, in his scheme of defense, also outlines means for flooding the compartments of vessels in order to extinguish fire, which is one of the chief sources of danger in action. He also points out that the ships have too much top hamper and quotes a very pointed editorial in the Engineer, New York, making the same criticism. Space is too limited to give these articles the justice that their thoroughness merits; but it will amply repay any shipbuilder or mechanical engineer to procure these numbers of the World, peruse them carefully and file them for reference.

A DEEP WATER DIVER.

Mr. Carlos F. Myers, who is a well known mechanical draughtsman of Cleveland, and who has been in the employ of some of the leading establishments of the city, has completed the drawings for a diving apparatus intended for work in deep water. Mr. Myers is a gentleman well educated in other directions than his own branch of business, in which his thoroughness and high capabilities are well known to his friends and former employers. His apparatus is simple in its general scheme, but is supplied with appliances new and old, to make it safe and useful. He has applied for a patent in this country, but is holding it back until he can make proper arrangements in foreign countries. Mr. Myers'

OFFICERS OF THE NEW STEAMSHIP CITY OF BUFFALO.



CAPT. JOHN EDWARDS.



A. D. McLACHLAN.

W. H. THORPE.



J. G. RANDALL.

chief claim for the practicability of the machine is the fact that it is constructed on well-known principles of natural philosophy and mechanics, and he has adapted his machine, in all its parts, to resist an actual hydraulic pressure equal to that exerted by water at a submarine depth exerted at 1,000 feet. This principle of resistance is carried into the joints and the connections with the surface. From the drawings and specifications, which have been shown to THE RECORD under pledge, and from the massiveness of those parts of the machine of which models have already been made, it seems to be one of those valuable inventions, the simplicity of which leads people to wonder, after success has been attained, why they "never thought of it before." It is, moreover, as novel as one of Jules Verne's brain fancies which practical men have converted into realities. His calculations have already been proven as already stated, by hydraulic tests. He has one of his machines under construction, and hopes to have it completed in time to do some deep water wrecking on his own account in the lakes next season. He is at present organizing a company with modest capital to build the first machine and has made such arrangements that if it proves the

entire success he anticipates, the first dividends will amount to several hundred per cent. of the outlay. THE RECORD takes the liberty of saying that this calculation is by no means visionary, as any lake man of experience and a memory for past disasters will admit the vast possibilities in store for those who shall succeed in solving the problem of deep water wrecking. And to the thoughtful mind, well versed in hydrostatics, it does not seem that deep water diving presents nearly so many difficulties within the scope of the known principles of physics as does the problem of aerial navigation, about which so many great minds are so sanguine.

THE LIBEL OF THE DEVEREUX.

The owners of the steamer Nyanza hold the J. H. Devereux responsible for the collision between the Nyanza and Northern King in Mud Lake, St. Mary's River, July 16, and have libeled the Devereux for \$40,950. The libel states that the Nyanza and Devereux were crossing Sailors' Encampment and passing into Little Mud Lake when the Devereux, which was astern, tried to go by the Nyanza. As she came alongside her "suction" drew the Nyanza over. The captain of the Nyanza warned the Devereux not to pass, and she fell back twice; then the Northern King was seen coming ahead, and both boats gave her a whistle. For some unknown reason, it is claimed, the Devereux came on again, and in the narrower part of the channel both boats slowed down; but the fantail of the Devereux struck the Nyanza on her starboard quarter, bringing her into the suction of the Devereux and rendering her unmanageable when lying in the course of the Northern King. The case will be heard in the United States District Court.

LITERARY NOTES.

On January 1 The American Engineer and Railroad Journal and the National Car and Locomotive Builder will be consolidated into one publication, with the title American Engineer, Car-Builders and Railroad Journal. The form of the paper will then be changed, and it will be issued monthly thereafter, and the subscription price will be reduced to \$2 per year. Mr. M. N. Forney will have charge of the editorial department, with competent assistance.

John Wiley & Sons of New York, who co-operate with the firm of Chapman & Hall, limited, of London, in the publication of scientific text books and industrial works, has issued a new catalogue of new works by well-known authors of recognized ability. The RECORD is agent for all of these, and can furnish standard works on any branch.

The attention of the country is called now and then to the deficiencies of the United States Naval Academy. The needs of this time-honored institution have never, perhaps, been so graphically shown as in an article on the subject by Professor T. R. Lounsbury, of Yale, published in the January number of Harper's Magazine. Professor Lounsbury not only exhibits the lamentably inadequate preparation of the young men who enter Annapolis, but the absurdly undemocratic policy which controls appointments. The increasing importance of the Navy adds interest to this subject, which should command the attention of Congress during the present session.

The new Hydrographic Office Chart of Lakes Erie and Ontario, is something no master sailing the lower lakes can afford to be without. It contains the latest information regarding depths of water, compass variation, lights and fog signals, and includes Lake St. Clair and Detroit Rivers, besides the lower end of Lake Huron, the southern part of Georgian Bay and all of Saginaw Bay. These charts can be obtained at the office of THE MARINE RECORD, No. 144 Superior street, Cleveland, at 75 cents each.

IN THE ENGINE ROOM.

THE IMPORTANCE OF ENGINE INSPECTION.

Engine owners and attendants are too apt to assume that because an engine is doing its work well, it is in satisfactory order throughout, and consequently it would only be tempting Providence to disturb the working parts. Many accidents would have been prevented by timely examination but for this unwise confidence. It is by no means uncommon for a large engine to work for two or even three years without any examination of the crankshaft journals, the reason usually given for such neglect being the fear of the bearings heating after being opened up. In the course of a couple of years a defect may develop and may actually cause fracture of the shaft and serious damage without any warning being given. On the other hand, if examinations are made more frequently, the defect will almost certainly be discovered in its earlier stage, and stoppage of the works can be avoided by having a new shaft prepared while the defective one is still at work. When all the working parts of an engine are opened up periodically, the risk of trouble from heating or like causes on resuming work is much less than when such examinations are only made at very long intervals. The principal bearings, crankshaft, crankpins, crossheads, should be examined about twice a year, and the interior of cylinders, pistons, valves, and air pumps should be seen about every three months. The chief problems which have presented themselves to the insurance engineers for solution have been, first, to ascertain as exactly as possible the cause of each breakdown; and, second, to point out how such accidents can be avoided in the future. In their treatment of these questions, the engineers have rendered their most valuable services to both makers and users of engines, and it is to be regretted that the results of their labors in this direction are not still more widely known.—H. B. Spencer in Cassier's Magazine.

TRIAL OF THE TEXAS.

In a trial outside of Sandy Hook, New York, on December 19, the United States battleship Texas, during a run of nearly over three hours, developed an average speed which is put at 17.82 knots per hour, which, it is said, places the Texas at the head of the fastest battleships in the world, and on her full trial it is expected that even this speed will be exceeded. During the trial it was found that the suction pipes of the drainage system leading from the engine room to the bilge pumps were not large enough to carry off the water used for keeping the bearings cool, and after an official run of three hours and six minutes the starboard engine was shut down. The primary cause of the stoppage was a hot bearing on one of the circulating pumps. A computation made from unofficial data shows that the main engines developed a sustained average of 8,900 horsepower on an average of 126 revolutions per minute for both engines. This was with an average steam pressure of about 143 pounds, the designed working pressure being 150 pounds, and an air pressure in the grate pits of 1.8 inches of water.

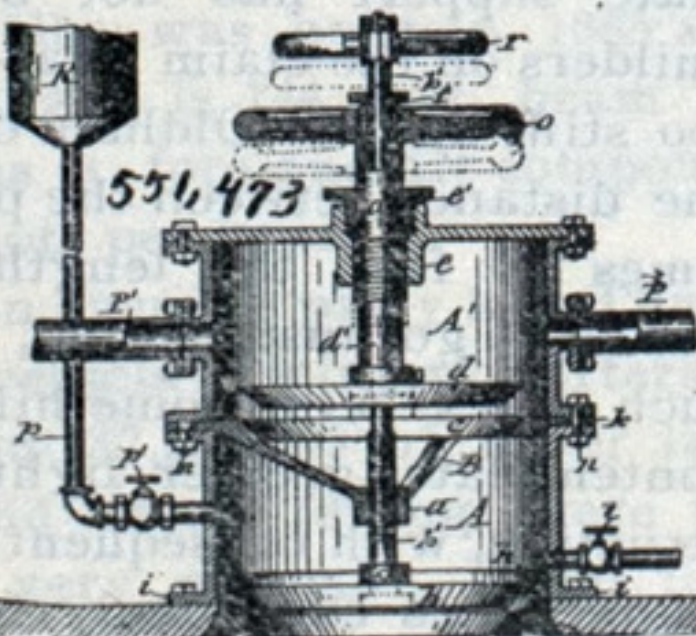
The day was a perfect one, and the vessel, when running at over 17 knots, gave ample evidence of her stability as a gun platform, with an absence of vibration said to be highly satisfactory.

NEW INVENTIONS.

(ILLUSTRATED.)

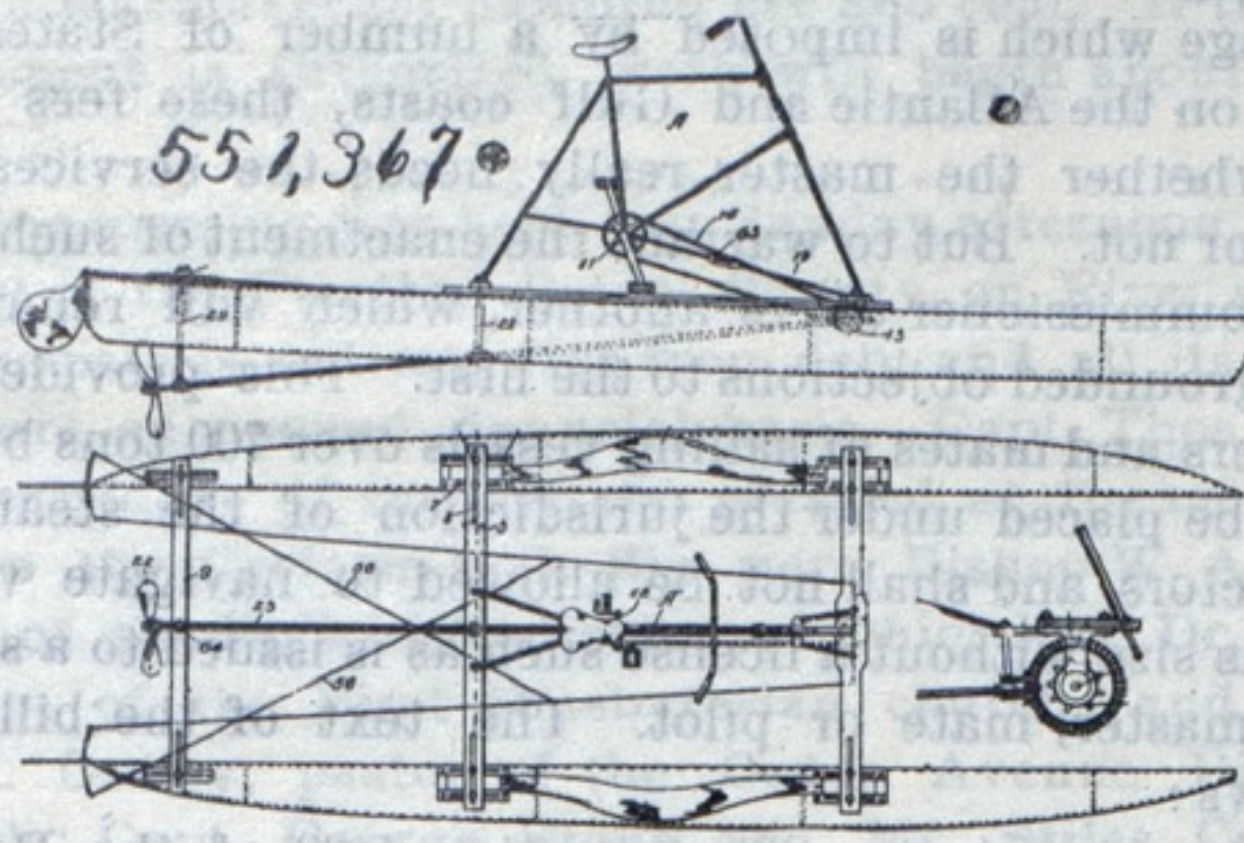
No. 551,473. Sea-Cock for Vessels. Pardon T. Perkins, Oswego, N. Y. Filed April 20, 1895.

The claim is for a safety seacock, comprising a case provided with a water inlet from the exterior of the vessel, and service pipes connected to the case above said inlet, a primary valve for opening and closing the inlet and opening inward therefrom, a secondary valve operating independently of said primary valve interposed between the same and service pipes, an inlet for incorrigible fluid to the space between the valves, a waste-cock tapping said space, and an air-vent in the top of the case.



No. 551,367. Marine Velocipede. George F. Cremer, St. Paul, Minn. Filed January 9, 1895.

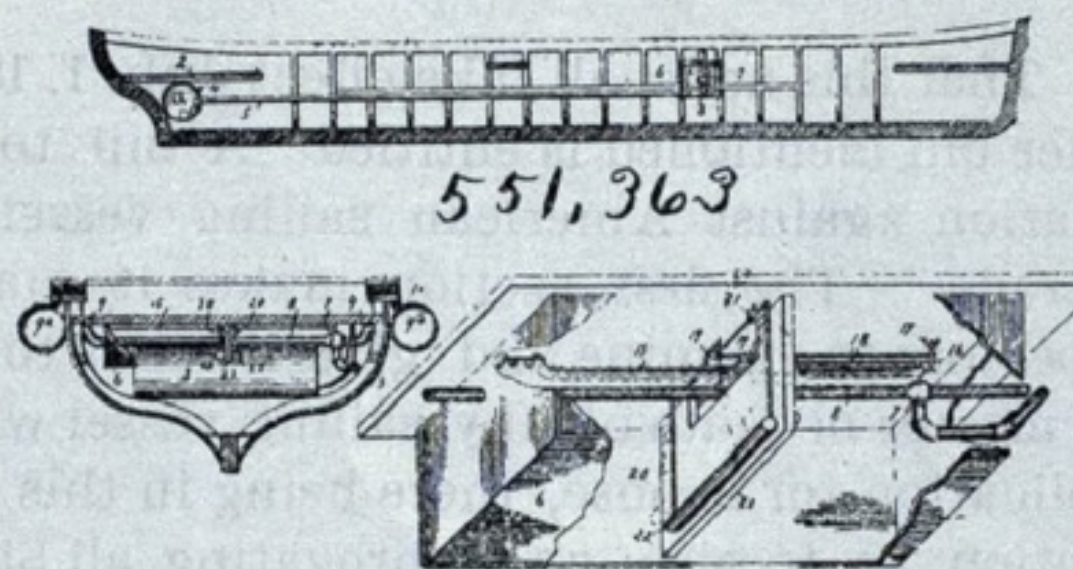
The claim is for a pair of similar hulls, means for adjusting these hulls toward or from each other, as they lie parallel in the water, the bicycle frame carried by said hulls, and means for adjusting this frame longitudinally thereon. Also for the combination therewith



of lugs depending from the cross bars, a counter shaft having journal support in these lugs and operatively connected with the driving mechanism, the projection extending rearwardly from said cross bar, the depending standard being adjustable along said projection to and from said cross bar, the propeller shaft having journal support upon said depending standard. Its bevel pinions and the beveled gear are carried by said countershaft and meshing therewith.

No. 551,363. Boat. Francis H. Church, Kansas City, Mo. Filed August 30, 1895.

The claim is for the combination with a boat of a compressed air cylinder located therein, a pipe leading from said cylinder, a valve connected to said pipe, a cross-pipe extending from each side of the valve cut through the opposite ends of the box in which they are locked, flexible connections between the ends of said pipe, and air sacks arranged along the sides of the boat. These air sacks are of course flexible, and are connected by suitable pipes, in which are valves



operated by spring, said spring being automatically released by a pendulum connected therewith. The first mentioned valve is operated by a spring; there is a hook for supporting one end of this spring above the valve stem, rods for releasing the hook from the spring, hangers having crank portions thereon to which the rods are secured, weights which are secured to the hangers in order to maintain the same in a vertical position, and a partition which separates said hangers and permits but one hanger to operate its rod at one time.

A PERTINENT INQUIRY.

In the Senate Friday, Mr. Chandler submitted the following resolution, which was considered by unanimous consent, and agreed to:

Resolved, That the Secretary of the Treasury be directed to transmit to the senate a statement showing during each of the last five years, and for the whole period, the gross amount of the imports from ports of Great Britain and her colonies and dependencies, together with the amount of the exports to such ports; also the number of entries of British vessels into American ports, and, if readily ascertainable, their gross tonnage.

The torpedo boat destroyer Lightning, built by the Palmers, of Jarrow, went through her official trials on November 5. The contract called for a speed of 29 knots per hour, maintained for three consecutive hours, and this the builders exceeded by practically one knot per hour. The average for three hours gave 27.944 knots an hour. In the best of the runs the Lightning ran the measured course in 1 minute and 55 seconds, this speed being equal to 31.3 knots, or more than 36 miles per hour. She had all her weights on board, and was loaded down to contract conditions. The run was marked by the entire absence of any flame from the tops of the funnels.

SEARCH LIGHTS PROVED CONFUSING.

In some recent torpedo maneuvers of the French Mediterranean Reserve Squadron, two divisions of the squadron in line abreast approached one another to within a distance of 3,000 meters when the second stopped, and the ships of the first, turning eight points to port, unmasked eight torpedo boats astern of them, which were to make the attack. It was estimated that during the two and one-half minutes the vessels were under fire that a discharge of 700 small caliber projectiles could have been poured upon them. The Amiral Duperre, at a range of about 160 yards, and the Caiman, at about 90 yards, were missed, but the Indomptable, at 40 yards, was struck by a torpedo just before the funnels. The Richelieu and Terrible, the former making use of her Bullivant nets, were attacked by three boats by moonlight at Lavandon, the range varying between 90 yards and 160 yards. The nets of the battleship arrested the three torpedoes discharged, but the boats would have been subjected to a hail of some hundreds of projectiles. So confusing were the search lights to those on board the Orage that she signaled for these to be extinguished, since the helmsman could no longer safely direct her course. At Bregancon the Amiral Duperre, Caiman and Indomptable were attacked by six torpedo boats of the mobile defence in two groups. The attack of the first group was a complete failure, not one torpedo finding its mark at short distance, and it was estimated that the boats would have been destroyed before coming within effective range. In the attack of the second group, the Indomptable was hit by a torpedo from No. 123 at 80 yards, but here again it was necessary to extinguish the search lights in order to make the navigation safe for the boats.

TRADE NOTES.

The December number of the Penberthy Bulletin, issued by the Penberthy Injector Co., Detroit, is full of matter interesting to engineers. It is increased in size from eight to twelve pages.

We are in receipt of a calendar from Robert Poole & Son Co., engineers, founders and machinists, Baltimore. It contains more than a dozen handsomely vignetted pictures of the plant and some of its products.

The Goodsell Packing Co., manufacturers of high-grade engine packings, No. 20 West Lake street, Chicago, are sending out a good luck calendar, a portrait of Mr. B. W. Goodsell appearing in a horseshoe border.

The Berlin Iron Bridge Co., of East Berlin, Co., have just completed for the Standard Oil Co., at Constable Hook, N. J., a compounding building 120 feet wide by 130 feet long. The roof trusses are composed of steel with steel purlins and covered with galvanized corrugated iron.

The Edward P. Allis Co., Milwaukee, has received from the Carnegie Steel Co., Ltd., an order for four pairs of compound blowing engines. This makes a total of 11 pairs of these compound engines ordered from the Milwaukee company by the Carnegie Steel Co., in the past five months.

The contract for the construction of one of the new battleships has been awarded to the Newport News Shipbuilding and Dry Dock Company on their bid of \$2,350,000 and the Union Iron Works of San Francisco have been given the opportunity to take the other if they will reduce their bid to the same figure.

Maine is not in it for big ship timber any more. At the present time Ohio takes the cake. W. C. Stiles of Warren, O., manufacturer of all kinds of long ship timber, recently shipped to R. G. Packard, No 130 Pearl street, this city, two oak sticks, 32 inches square and 60 feet long—5,120 square feet in each. These are probably the largest oak sticks ever brought to this port.—Marine Journal, New York.

The Josephine is to be the name of the 200-foot steel steam yacht now being built at the Crescent ship yard, Elizabethport, by Lewis Nixon, for P. A. B. Widener, of Philadelphia. Six weeks after her keel was laid she was completely in frame and plated. The contract for the yacht was signed Oct. 13, her keel laid Oct. 19, the first frame fitted Oct. 21, she was half in frame Nov. 12, and last week her decks were laid. She will have a promenade deck 18 feet wide and 135 feet long. Nixon is also building at this yard a gunboat for the United States navy and a new ferry-boat for the Pennsylvania Railroad.

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CLEVELAND, O., DECEMBER 26, 1895.

PRESIDENT CLEVELAND has receded gracefully from the position he had taken against the promotion of Commander Nicol Ludlow, by making him a Christmas present of the rank of Captain, thus allowing him to take command of the cruiser Boston.

UNLESS present arrangements are altered by exceptionally severe weather, lake navigation by coarse freighters will not have been ended at Christmas. There are now in port at Cleveland three vessels, the Santa Maria, Teutonia and Thomas Gawn, which expect to return to Detroit as soon as they discharge cargo.

THE Great Lakes are fortunate in securing the chairmanship of the River and Harbor Committee in the person of Hon. Warren B. Hooker, of Chautauqua county, N. Y. Mr. Hooker has a good understanding of lake needs, and of the great service to the commerce of the Northwest which will be performed by giving the channels and ports deep water. The Great Lakes will doubtless get a fair show in the rather restricted appropriations which must be expected this winter.

THE prices of the fourteen boats building for J. D. Rockefeller and others have never been made entirely public, but owing to the spirited bidding the prices varied considerably. The difference between the highest and lowest bid amounted, it is said on good authority, to nearly \$30,000. The Detroit Dry-dock Co. is referred to as the highest bidder, and from the fact that their contract was not awarded until after the others had been made public, this seems to have been the true state of affairs.

IF the present strained diplomatic relations with Great Britain keep up, the shipyards of the coast may receive from the government an order which will mean as much to them as the Rockefeller contract did to lake yards. Secretary Herbert has decided to give the contract for one of the new battleships to the Newport News Ship Building and Dry-dock Co., and the other to the Union Iron Works, San Francisco, if the latter will reduce their bid, \$2,740,000, to a point nearer that of the Newport News company—\$2,250,000. In addition to this he has about decided, it is said, to ask Congress for authority to build four more of this class, if the above figures will be accepted by builders, giving two ships to each of the builder just mentioned, and two to cramps. Congressional ratification of this plan would appear to be very well advised from the standpoints of both prudent defense and business economy.

A FAR-REACHING LAW.

Something very important in maritime legislation contemplated by Congress this winter is a bill—or rather two bills, for they will be considered together—which has been laid before Congress by Commissioner Eugene T. Chamberlain, of the Bureau of Navigation. This legislation contemplates the abolition of compulsory pilotage which is imposed by a number of States and ports on the Atlantic and Gulf coasts, these fees being due whether the master really needs the services of a pilot or not. But to warrant the enactment of such a law the Commissioner offers another, which will remove all well-grounded objections to the first. This provides that masters and mates of sailing vessels over 700 tons burden shall be placed under the jurisdiction of the steamboat inspectors, and shall not be allowed to navigate vessels of this size without a license such as is issued to a steamboat master, mate or pilot. The text of the bill is as follows:

Be it enacted, etc., That Section 4438 of the Revised Statutes, which provides for the licensing of officers of steam vessels, be, and is hereby amended as follows:

SEC. 4438. The boards of local inspectors shall license and classify the masters, chief mates, engineers and pilots of all steam vessels, and the masters and chief mates of all sail vessels of over seven hundred tons. It shall be unlawful to employ any person, or for any person to serve as a master, chief mate, engineer or pilot of any steamer, or as master or chief mate of any sail vessel of over seven hundred tons, who is not licensed by the inspectors; and any one violating this section shall be liable to a penalty of \$100 for each offense.

Sections 2 and 3 of the bill amend respectively Sections 4439 and 4440 of the Revised Statutes by including with steam vessels all sail vessels of over seven hundred tons, and the remainder of the bill is as follows:

SEC. 4. That Section 4417 of the Revised Statutes be and is hereby amended by adding thereto the words: "The local inspectors shall once in every year, at least, upon application in writing of the master or owner, carefully inspect the hull of each sail vessel of over seven hundred tons within their respective districts, and shall satisfy themselves that every such vessel so submitted for their inspection is of a structure suitable for the service in which she is to be employed, has suitable accommodations for the crew, and is in a condition to warrant the belief that she may be used in navigation with safety to life."

SEC. 5. That this act shall take effect July 1, 1898.

The other bill mentioned is entitled "A bill to remove discrimination against American sailing vessels in the coasting trade." The first section makes it mandatory upon inspectors to examine and give licenses to, if worthy, each master or mate of any sailing vessel who may, make application for license, there being in this instance no restriction as to size; and abrogating all State laws which impose compulsory pilot dues upon vessels in the coasting trade, and providing that none shall be imposed in future.

There are nearly 125 vessels on the lakes which will come under the provisions of this law; this number will probably be increased to 150 by the time set for the law to take effect. It is possible that this time may be advanced, as the second of the bills mentioned is to take effect some six months after its passage, and this leaves the harbors for a considerable time without protection from blunders of masters who try to be their own pilots in unknown harbors on the coast. Of course this is merely the legal theory, and applies only to the coast, as any man competent to sail a lake vessel has already acquired the knowledge necessary to him as a pilot. But Congress may very possibly see in this a reason for advancing the date of effect of the licensing bill.

This bill is in the direction of a movement which THE RECORD has for years consistently and persistently advocated—the placing of all craft, steam and sail, under one department, with full control under existing laws, or at least the appointment of a wreck court of inquiry which would have jurisdiction over both classes of tonnage. The law, in its present form, provides for no authority or surveillance over the officers of said vessels, and in case of a fatal collision between sail vessels there is no one authorized to investigate, unless such a collision might have occurred within the well-defined limits of a county—a very unlikely chance—when the coroner would have such authority. In case of a fatal collision between a steamer and sail vessel, the inspectors may investigate, but they are without authority to act if the sail vessel is at fault, which is very possible, even under the existing rules of the road.

The bill contemplates, however, an increase of no small proportions in the work of the local and supervising in-

spectors, and as General Dumont is even now asking for an increase of the working force, it will only be fair on the part of Congress to consider his request in connection with these bills. It might also be suggested that the words "and barges" be added after the words "sail vessels" in the bill, as the law would thus be rendered more explicit in regard to a large and important class of lake tonnage which carries neither canvas nor steam propelling power, and the courts would thus be saved the trouble of an interpretation.

COST OF THE ERIE CANAL.

Thomas Curtis Clarke, writing in the January Scribner, shows that the Erie Canal, so far from being a burden on the State of New York, has actually paid for itself almost twice over. He gives the following statement, secured from figures furnished by the State Comptroller:

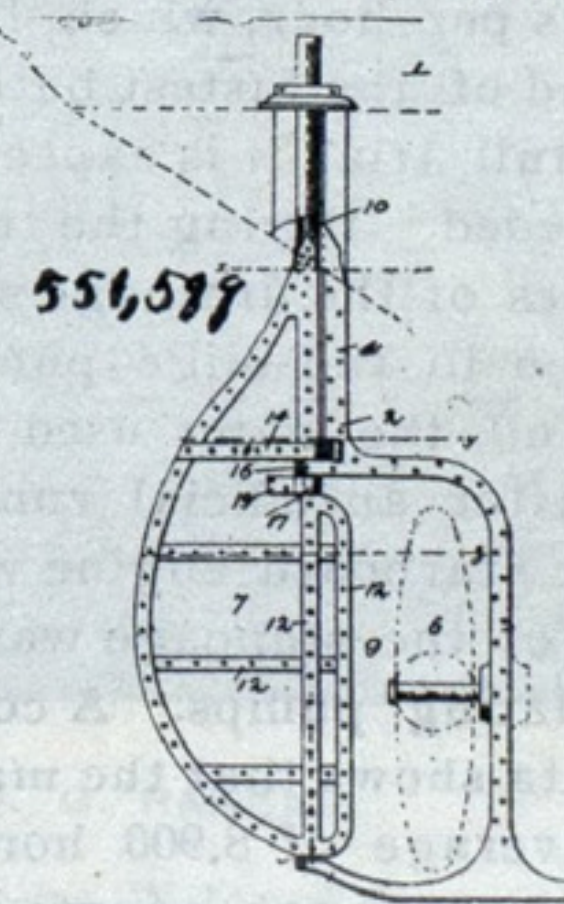
The cost of the original Erie canal was \$7,143,789.86; of the enlarged canal, \$31,834,401.30. The State has expended since 1862 in lengthening locks, maintenance, repairs and other improvements, \$33,948,761.37. The estimated cost of deepening the canal to nine feet is \$9,000,000 (voted for by the people on November 5, 1895) thus making the total cost \$72,926,491.73. The total amount received for tolls on the Erie canal, from its opening to the close of 1882, when tolls ceased, was \$120,684,587.35, showing a surplus in its favor of \$47,757,995.62.

Mr. Clarke has, even in this statement, been unintentionally unfair to the canal's record, for the \$9,000,000 just appropriated has not been expended upon the canal. This sum should be deducted from the \$72,926,591.73 leaving \$63,926,591.73, or only 53.2 per cent of earnings.

The writer speaks encouragingly of the Cleveland Steel Canalboat Company's enterprise, and predicts its extension all over the lakes when the canal has been deepened to nine feet. An illustration shows the Alpha near West Troy, towing her four barges, two abreast. Another drawing shows the new trolley system, with which experiments are now being made. The author suggests that a ship canal could be constructed in American territory around Niagara Falls at from \$25,000,000 to \$30,000,000, according to the figures of U. S. engineers.

MR. OLDHAM'S RUDDER.

Mr. Joseph H. Oldham, of Cleveland, one of the best known naval architects on the lakes, has just obtained a patent (No. 551,599) on a stern frame and rudder for



vessels, for which he filed an application March 25, 1895. The claim is for the combination with a vessel of a stern frame comprising the lower forward portion and the upper rear portion, the horizontal connection, formed with a gudgeon, of a rudder having a forward extension, the pintles, the rudder stock, the stop casting or forging having inclined lugs, the band embracing the upper pintle, and secured to the rudder and stock.

Mr. Oldham's idea is that while the lake type of balanced rudder is an improvement over the salt water style for inland navigation, some changes are necessary to fully utilize its surface. He finds that owing to the open space forward of the stern frame, above the propeller, and in the angle 10 y 2, is left open and forms an eddy in the water which is to be at once operated upon by the surface at the upper part of the rudder, and by filling up this space solid, he secures a steady flow, and makes this part the most useful and reliable portion of the rudder.

Another improvement claimed by Mr. Oldham is the additional strength afforded by a gudgeon at 7, of which the line y is a projection. The placing of an intermediate support has not been countenanced by some builders on the claim that the rudder port is thus made too stiff; but Mr. Oldham disputes this, and says that as the distance between the point 10 and the shoe is sometimes 20 feet, the length is far too great for a heavy rudder to go unsupported, the wear upon the shoe in such cases being something remarkable. Mr. Oldham contemplates greater lightness and simplicity of construction, with consequent greater ease in repairing, by using plates exclusively for the material, with a number of straps for strength, as shown in the drawing, instead of making the rudder blade of wood and sheathing it with plates.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to The Marine Record.

The steamer Charles Stewart Parnell had her outside planking cut up badly by the ice on her last trip up. She has made 17 round trips between Chicago and Buffalo the past season and Capt. P. Griffin says she has done a very profitable season's work.

C. W. Elphicke & Co. have chartered the Red Wing and San Diego for oats at 2½c for winter storage and delivery at Buffalo in the spring. Some other charters for corn at 3c or over are reported, but vessel agents are reticent about announcing them.

Miller Bros., in accordance with their usual custom, gave to each of the employees at their shipyard a fine turkey on Christmas Eve. Nearly 300 turkeys were taken by the men to their respective homes.

The many friends of T. B. Banner are very glad to see him around again attending to business at his old stand, 57 East Kinzie street, after his fortunate recovery from a serious sickness with typhoid and malarial fever, with which he was laid up six weeks.

J. J. Keenan, proprietor of the Riverside Boiler Works, at Fuller street bridge, south branch of Chicago River, has just completed his new boiler shop, which has a frontage of 65 feet and a depth of 120 feet. He has fitted out the establishment with the latest improved machinery for boiler making and repairing. Mr. Keenan, who has been in the boiler making and repairing business in Chicago six years, served his apprenticeship at the Globe Iron Works, Cleveland, and work entrusted to him is faithfully and well performed.

Capt. Thomas Fitzpatrick, of Cleveland, is here looking after his fleet, of which he is part owner. Capt. James Davidson was in charge last Saturday.

The winter fleet this year consists of 121 steamers and 69 schooners and barges, whose aggregate value is above \$20,000,000. At the present rate of freight, these boats, if all loaded, will have about 400,000 in freight, their total cargoes being worth \$6,000,000, on which will be placed \$50,000 insurance. The capacity of the winter fleet exceeds anything on record, the figures for the past six years, of available capacity being as follows: 1890, 8,478,000 bushels; 1891, 7,436,000; 1892, 5,621,000; 1893, 11,289,000; 1894, 12,720,000; 1895, 13,202,000.

The last receipts of dock coal at Chicago show a considerable increase as compared with the corresponding period for last year. The final arrivals put a somewhat different complexion on the amount which is held in hand, so that there will not be a great variance as compared with last year. Nevertheless, there will be a shortage of a great many thousand tons. The conditions of business in this respect during the last four weeks were a great improvement over first and middle parts of the navigation season. The trade was considerably startled over a falling off in coal receipts by lake as well as by rail, owing to the fact that the marine business found it more profitable to ship to Duluth than to bill for Chicago. As the matter stands now all rail coal will show a greater disparity than dock coal. Taking it all together it will not be an exaggeration to say that at the end of the year rail dock receipts will show a difference as compared with those of last year, which will amount to about 80,000 tons.

New York dailies announce the arrival there of the auxiliary steam yacht Black Pearl from Southampton after a boisterous passage during which she experienced continuous gales from southwest and northwest and had her decks swept of everything movable. The Black Pearl was purchased from the Earl of Penbroke by George K. Sheldon, of Chicago, and will be taken there early next season. She will cruise to the West Indies during the winter months. She was built in 1885 and measures 345 tons. Her length is 144 feet, beam 123 feet, depth 13 feet. She has a fore-and-aft compound engine and can make ten knots per hour.

Capt. George Tebo gave an evening party last Thursday to some 25 captains of vessels in winter quarters at this port representing about \$2,500,000 of lower lake vessel property. Cards and story telling were the order of the evening, and a very pleasant, jovial time was much enjoyed by all present.

The greater portion of officers of fleet in winter quarters here got away in time to spend Christmas at their homes.

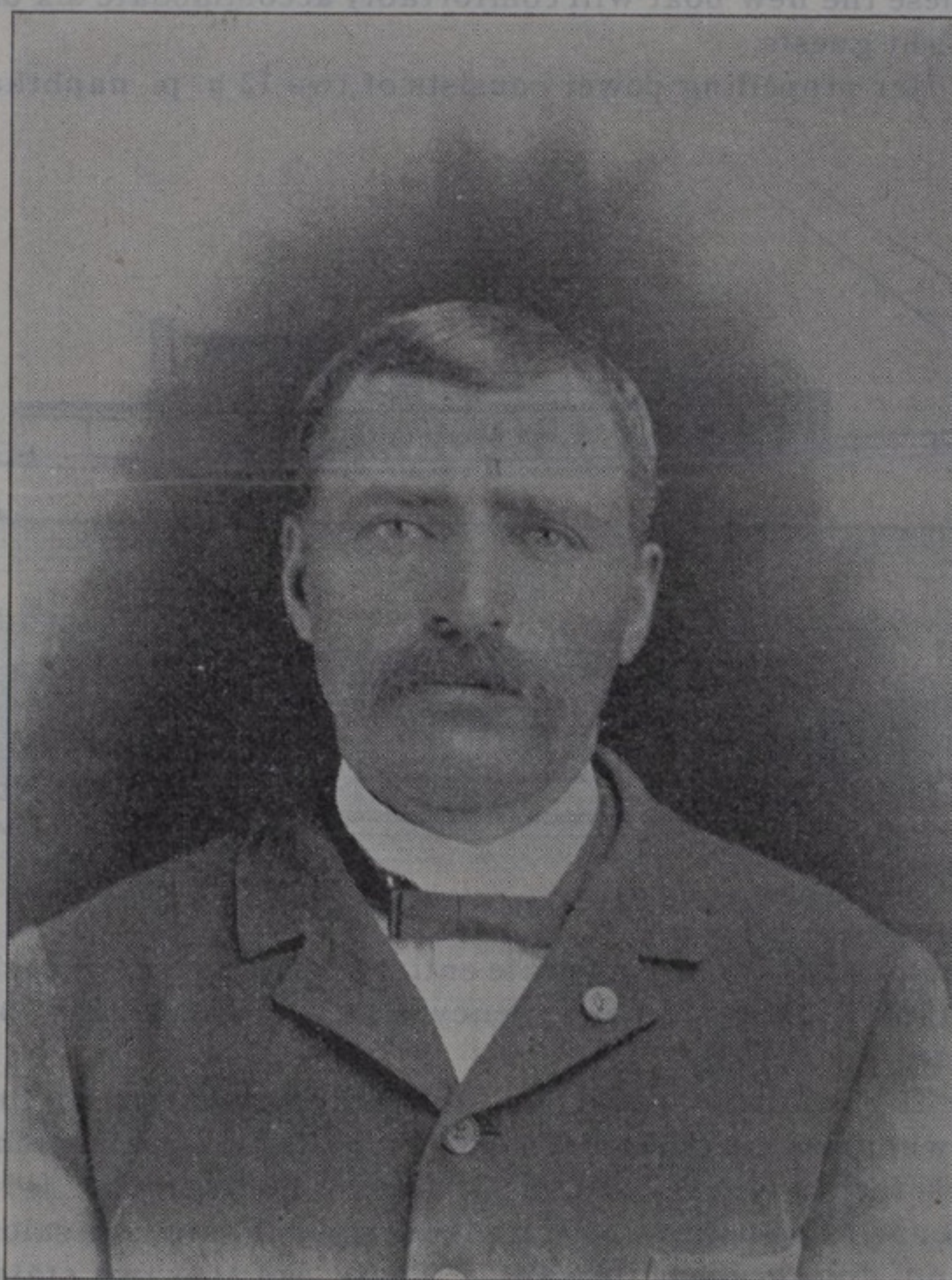
WILLIAMS.

CLEVELAND.

The Huron Dock Co. will meet at an early date to consider the enlargement of the company's facilities at Huron. Should the slip be built, it will be located north of the present one, and considerably larger, extending along the beach. It will be equipped with the latest improved machinery for handling ore and coal. If the improvement is authorized, work will begin about February 1.

A fine meeting was held last Sunday afternoon in the chapel of the Floating Bethel Society, on River street. The society is entirely free from debt and all its workings are on a sound financial basis. Capt. Thos. Wilson, president of the society, presided at the meeting, and on the platform with him were Bishop W. A. Leonard, of the Episcopal diocese of Ohio; Rev. Dr. H. C. Hadyn, of the First Presbyterian church; and Rev. H. R. Cooley, pastor of the Cedar Avenue Disciple church; Capt. George Stone and Mr. Stiles Curtiss, vice-presidents of the society; W. D. Rees, secretary and treasurer; Robert Wallace and C. H. Strong, directors; Capt. George Warner, harbor master. All the clergymen present spoke in the heartiest manner of the exceptional work performed by the mission and by Chaplain J. D. Jones, who responded modestly, and reviewed the year's work.

The proposed municipal harbor improvements continue to be discussed, and meanwhile the winter is advancing apace. It seems probable, however, that the



CAPT. JOSEPH VALENTINE.

Legislature will grant the city permission to bond itself for \$300,000, to be devoted to improving the harbor. A conference with the members of the Cuyahoga delegation, held last Saturday, was attended by Mayor McKisson and by General Counsel H. D. Goulder, of the Lake Carriers' Association.

Cleveland Lodge, of the Ship Masters' Association, held its first regular meeting for the winter last Friday afternoon. It was decided to enlarge and move their lodge and club rooms, and it was found that the necessary arrangements to that end could be made at once. It is intended to give a social in their rooms at least once a month.

The wreckage of the schooner Nellie Duff, above Lorain has completely disappeared, the spars and rigging having been carried away by the ice. The wreck lies in shallow water, however, and will be a menace to vessels next season. It will probably be located and destroyed in the spring. Capt. James Bowen, of the tug Cascade, Lorain, expresses his suspicion that the captain met with foul play just before the boat went down.

The first annual ball of Cleveland Lodge No. 1 of the Lake Pilots' Association, was held Christmas eve at Army and Navy Hall, and was attended by about 400 people, who danced far into the night. A very fine

supper was served about midnight. The floor managers were Capt. Wm. Robinson, Capt. David Vail, Sam Allen, J. Lefumboys, William Clendenning and Patrick McCarthy, and the floor directors were Capt. Joe Gorman, Capt. William Pringle, Capt. Sam Gould, and Capt. F. Rice. The Cleveland Lodge is in a healthy condition, with a large and growing membership. Capt. John Buchanan is first officer and Capt. Fred Crockett, second officer, Capt. Thomas Allen, treasurer, and Capt. William Pringle, E. Kennedy, and John Clark trustees.

BUFFALO.

Special Correspondence to The Marine Record.

Mr. W. J. Connors, the large freight-handling contractor of this port, Chicago and elsewhere, has purchased the controlling interest in the Buffalo Enquirer, and contemplates erecting a new building for its publication soon.

The aldermanic committee on wharves and harbors has declared in favor of placing the new excursion boat dock between Jersey street and Porter avenue. This plan meets the hearty approval of marine men, who are voiced by Capt. M. M. Drake and Capt. J. H. H. Brown.

It is stated that another ferry line is to be established between the foot of Hamilton street, Black Rock and Victoria, on the Canadian side. No details are yet obtainable for publication, but it is stated that negotiations are now on foot for the purchase of one of the Detroit River ferry boats. Capt. Edward Maytham, of the Maytham Tug Line, and Edward Baxter, of Fort Erie, Ont., are the backers of the new enterprise.

The Lake Erie Engineering Works have completed all the parts of the new 30,000,000 pumping engine for the Buffalo water-works, and expect to have it set up by March. This establishment is gaining quite a reputation for "rush" work. The large 1,200 h. p. engine which this company built in the space of 30 days for the Buffalo Street Railroad Co., has run without a hitch ever since it was started.

Mr. W. J. Connors gave a dancing party to his svedores and freight handlers at Music Hall last Monday night. Everybody had a fine time, and everything passed off in the most orderly manner.

MARINE RECORD Life Savers' Series.

CAPT. JOSEPH VALENTINE.

(SEE ILLUSTRATION.)

Last Monday was the thirty-ninth anniversary of the birth of Capt. Joseph Valentine, keeper of the United States Life-Saving station at Hammond's Bay, on Lake Huron. He was born at Detroit, and remained there until 1869, when he went to Rogers City and Alpena. He devoted his energies to learning the trade of millwright, at which trade he continued until 1875, going north to Isle Royale in the spring of that year and sailing a small schooner for Capt. Cruger, who was keeper of the Rock Harbor Lighthouse, and returning to Rogers City the following spring. October 1, 1876, he entered the life-saving service under Keeper Feaben, at the Hammond Bay Station, and received several promotions during four years of service, being made keeper of the station October 21, 1880. This station is considered by surfmen the hardest point on the entire chain of lakes. In addition to the number of wrecks and the proportionate risks involved, the wrecks nearly always occur at a distance of from eight to thirteen miles from the station, and the locality is noted for its long pulls of the boat by water and long tugs of the apparatus on land, in cases of rescue. At the same time the station stands high on the score of good work preformed. The wreck of the schooner Lady Franklin was the last important loss in that vicinity. This wreck occurred closer to the station than any that have happened in years.

IMPROVEMENTS AT ESCANABA.

Dock No. 3, at Escanaba, is a scene of activity. The old dock has nearly all been torn down, and new piles are being driven as fast as the old are being removed. Heavy timber and planking will be put in, and the dock thoroughly rebuilt in all respects.

THE RECORD is in receipt of the annual reports of Major Clinton B. Sears, in charge of the improvement of rivers and harbors on Lake Superior, and Capt. J. H. Willard, in charge of work on tributaries to the Mississippi.

COMPOSITE STEAM YACHT HIAWATHA.

The 135-foot steam yacht designed by Charles L. Seabury & Co., of Nyack-on-Hudson, which is being built by same firm, is for Mr. Chas. Fleischman. The yacht is 16 feet 2 inches beam, 9 feet 6 inches depth and 7 feet draft. The hull is composite built. Frames and reverse frames are of angle steel, keelsons of steel, breast hooks of steel and fore-and-aft plates of steel. The planking is now being put on; it is of yellow pine and two thicknesses. The fastenings are of Tobin bronze through bolts. There are four steel bulkheads. The rudder will be of bronze, with steel shank properly protected from the water. The deck will be of clear white pine fastened with lag screws from under side of deck timbers.

There will be a mahogany deck house fitted on forward deck, the lower part paneled and the upper part fitted with heavy plate glass windows to slide up and down. In the upper part will be a buffet with a beveled edge mirror in center. This buffet is arranged for glassware, dishes, etc. Aft of the dining room and connecting with this saloon a stateroom will be arranged, finished in mahogany and fitted with a wide berth with drawers underneath, dressing case, and folding wash basin. The bridge for steering will be arranged on the top of the deck house, which is to be fitted with a grating and double brass bar rail fitted around the top. The steering wheel and binnacle will be set in proper position, also a powerful search light.

The chain locker will be fitted in the forehold. Directly aft of the chain locker and store-room will be the crew's toilet room, aft of which will be fitted berths and lockers for the crew. The forecabin will also be used as a mess room for the crew, fitted with a folding table. Next aft are two staterooms—one for the captain and one for the engineer; these will be fitted with wide berths, with drawers underneath, also a small dressing case. All these rooms are thoroughly ventilated by port lights.

Aft of these staterooms is the galley, full width of vessel, fitted with large ice box, dresser, dish rack, locker for coal, sink and pump. The finish of this room, as well as of the other rooms forward, is in butternut, natural color. Aft of the galley will be constructed the engine and boiler room, the bulkheads aft of boiler to be thoroughly protected from heat by non-conducting material. Directly aft of the boiler space will be the owner's stateroom, 6 feet 6 inches long, to extend the full width of the vessel, with the exception of a toilet room, which will be fitted on one side. This room will be finely finished in mahogany and fitted with a wide berth suitable for two, with drawers underneath and a large dressing case with beveled edge mirror. A skylight is arranged over this room for light and ventilation. The toilet room connecting with this is finished in mahogany, fitted with a marine water closet, large bath tub and set basin, arranged for hot and cold water, also for sea water connection for bath tub and pipe to heat same.

Aft of the owner's stateroom will be arranged the main salon, finished in mahogany, paneled on sides and ceiling. The salon will be fitted with a mahogany center table, properly ventilated, with port lights and skylight over the companionway. The entrance to salon will be through wide companionway leading direct from the deck.

The guests' staterooms are aft of this salon and will be three in number, with an extra stateroom for a maid. These rooms are to be finished in butternut and mahogany. There will be a berth in each room with drawers underneath, also a dressing case with mirror. Aft of the salon on port side will be a toilet room finished in butternut, fitted with water closet and stationary wash basin. Aft of the toilet room is the lazarette. Steam heaters fitted with Italian marble top, will be fitted in the owner's room, salon and dining hall on deck.

The machinery will consist of a Seabury design triple-expansion engine of latest type, and a Seabury safety water-tube boiler of improved design, with all fittings, etc., as required by law. The speed of the yacht is guaranteed 16 miles per hour for three consecutive hours over a measured course. The vessel will be flush

deck, schooner rigged, modern in every particular. She will carry three boats besides a launch, and will be equipped with electric lights throughout. The furnishings and equipment, upholstery, etc., will be the best, and in all her appointments will be complete in detail and ready for commission May, 1896. She will be in command of Capt. B. Frank Smith.

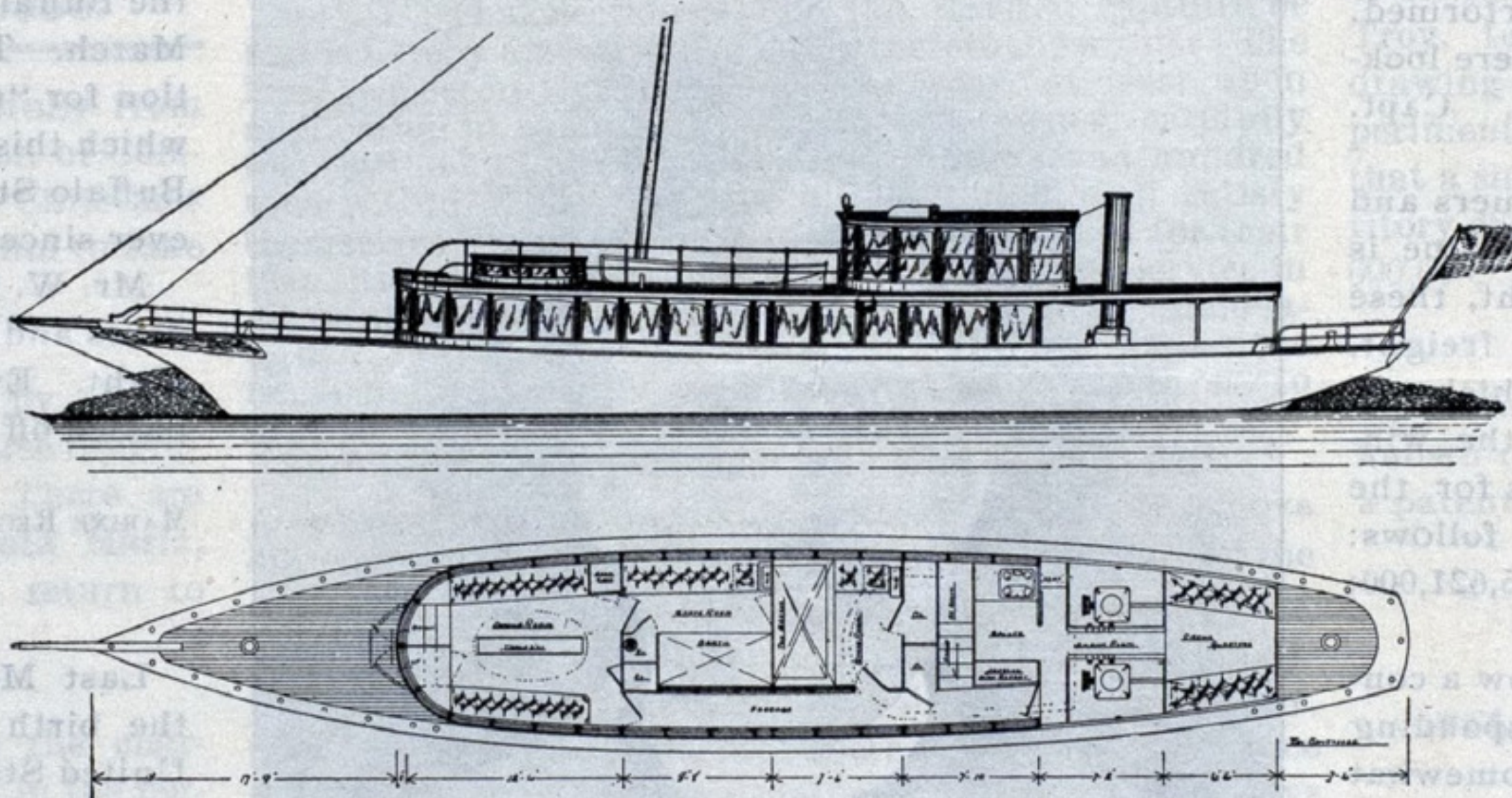
THE LARGEST NAPHTHA LAUNCH.

(SEE ILLUSTRATION.)

The Gas Engine and Power Co., of Morris Heights, New York City, are building a twin-screw naphtha yacht, the largest of this type, for Mr. Alfred Van Santvoord, proprietor of the famous Albany Day Line of Hudson River steamers, and owner of the side-wheel steam-yacht Clermont. This yacht carries out some of the peculiar, but very practical ideas of the owner, as are shown in the construction and arrangement of his passenger steamers.

The new yacht is to be used for cruising in the Florida rivers, and is 76 feet long over all, by 12 feet 6 inches beam, and has only three feet draft. She is of cedar with oak frames and copper fastened, and has an overhanging bow and square stern. The engines have a fuel supply sufficient for a run of 500 miles at a speed of 9 knots per hour. She is, however, equipped with a single mast, which will carry a try-sail, and can be used as an auxiliary or when it is necessary to economize fuel. The engines are operated by one man, and the crew comprises only the captain, engineer and cook. Besides these the new boat will comfortably accommodate six or eight guests.

Her propelling power consists of two 12 h. p. naphtha



MR. VAN SANTVOORD'S NAPHTHA YACHT.

motors, arranged to operate entirely independent of each other, so that in an emergency either or both may be used.

The available space for the accommodation of the owner and his guests is equal to that of a steam-yacht 100 feet in length, and as it is not disintegrated, is in shape to be used to better advantage. There is a salon and dining room forward. There are also two staterooms, one with single and one with double berths. The interior finish is in whitewood. All windows and ports are provided with inside blinds with fine wire screens, to prevent the intrusion of the insects which do so much to mar a pleasure trip in the South. There is extra provision for ventilation, and other arrangements to adapt the boat for these waters. She will be ready for service some time during January.

FOUND GOLD.

Steamboat captains familiar with the north shore of Lake Superior will be surprised to learn that near Jack Fish Bay, on the Canadian Pacific Railroad, a very rich gold mine has been discovered. Specimens of quartz have been taken from there so marvelously rich as to make one's head almost swim. Capt. Thomas Marks, of Port Arthur, informs the RECORD that a local company in Port Arthur and Fort William has been organized to work the property, and the whole stock put upon the market has been subscribed. Mayor McKellar, of Fort William, and his brothers, who have been residents of the district for thirty years, were the discoverers and have shown their faith in the property by taking stock for the full value of the mine.

The Dominion government has ordered that work in the St. Lawrence canals be continued all winter.

SHIPPING TRADE IN GREAT BRITAIN.

H. E. Moss & Co., the well-known sales agents for shipping, with offices at London, Liverpool, and New Castle-on-Tyne, have just issued their semi-annual circular, advertising for sale nearly 400 craft of various sorts. Their introduction to this list is as follows:

"Since the issue of our last circular in May, the shipping trade has remained in a very depressed state, and we cannot yet report any general improvement. In certain directions freights have been better, but, speaking generally, the past six months have been unsatisfactory, especially so for the owners of all except the most modern and best carrying types of steamers. Still there is a feeling that we have now seen the worst, and with the general improvement in trade and the opening of new markets, it is justifiable to think that 1896 will be a more satisfactory year for shipowners, if the first improvement in freights is not made the signal for an unreasonable rush to order new boats.

"A considerable quantity of obsolete tonnage has been broken up during the last six months, but there still remain several hundred thousand tons of old steamers which for trading purpose (if a profit be considered a necessary feature) are absolutely valueless, and the sooner the owners of such steamers submit to the inevitable the better for themselves.

"The number of tramp steamers building at the present time is not excessive. This is in itself a good feature, but it is qualified by the fact that the regular lines and companies are supplying themselves with large carrying cargo boats which will absorb a good deal of the employment which would otherwise fall to the lot of these tramp boats.

"Prices for building are just a shade higher than at the beginning of the year, but steamers can still be had at very low prices. It is probable that large government orders has an effect on the minds of both shipbuilders and their employees, (and consequently on prices) which is quite disproportionate to the real value of such orders. The present price for ordinary tramp steamers is about £7 per ton dead weight for boats about 2,500 tons dead weight, and £5 17s 6d to £5 12s 6d for boats 5,000 to 6,000 tons.

"There has been no difficulty during the last six months in disposing of the better class of second-hand steamers, and a large number of sales have been made; but there is no alteration to report in the selling prices. When better freights are obtainable, good boats which have been bought at these prices are bound to turn out remunerative investments.

A NEW SWEETHEART.

William Niman, the well known yacht builder of Buffalo, is at present building a sailing yacht for Mr. Leon L. Miller of that city. One feature is that the boat will be what is known as the over-lapped seam style, thus insuring lightness and consequently small draft. It has been an assured fact that boats of this style can show their heels to caked boats of heavier draft, in light breezes. Another consideration was that on account of the low stage of water which is likely to prevail, heavy draft yachts are in danger of going ashore or on the rocks, especially along the Canadian shore, where a good portion of the sailing is done in this vicinity. The boat will be especially adapted for heavy weather, but will also be fitted up as handsomely as any yacht of her class on the lake. There will be watertight compartments fore and aft and everything will be arranged to insure both safety and comfort. Her outfit will include such articles as brass signal lights, awnings, ice chest, portable stores, pumps etc., etc. In fact nothing will be spared to make the yacht a beauty. The boat has been named Sweetheart and will be ready for sea by spring.

SCRIBNER'S MAGAZINE.

Scribner's Magazine enters upon its tenth year with several new departments and a most promising outlook for interesting features. What most readers will first turn to is the long-expected serial by J. M. Barrie, his only fiction since the publication of "The Little Minister," four years ago. In these times of prolific novelists it is unusual for one of the most popular of them to show the reticence exhibited by Mr. Barrie. A reading of this first long installment of "Sentimental Tommy" will convince everyone that Mr. Barrie has produced a masterpiece. The very first line introduces the hero himself, whose mother is a Thrums woman, but living in the East End of London. There is humor and pathos in every page, with abundant indications that the career of "Sentimental Tommy" will be watched with almost unequalled eagerness by the reading world. A new portrait of Barrie, with several full-page pictures by Hatherell, accompanies the story.

PREPARING IRON FOR PAINTING.

Only iron and steel perfectly free from rust can be successfully painted. When the oxidizing process has once commenced, its progress for a time may be interrupted by paint, but it progresses slowly even under the paint, the latter finally peeling off together with the layer of rust.

Iron has a tendency to rust the moment it leaves the hammer or rolls. Even new iron requires treatment, which is usually provided for in specifications, by a clause to the effect that all metal, immediately after its manufacture at the shop, shall be brushed clean with wire brushes of all scale and dirt before painting.

Surface of rusting iron and decomposing paint demands thorough manipulation. This is sometimes had by merely a longer continued application of the wire brushes alone. Others use with the wire brush treatment kerosene, or preferably dilute solutions of sulphuric or muriatic acid. One railroad specification reads: "All parts badly pitted by rust shall be scrubbed with a solution of one part muriatic acid, c. p., to three parts of water." After which washing with strong lye water and a complete drying is prescribed. Another authority recommends the application of water containing from 2 to 3 per cent. of sulphuric acid, and a subsequent thorough rinsing with pure water, to be followed

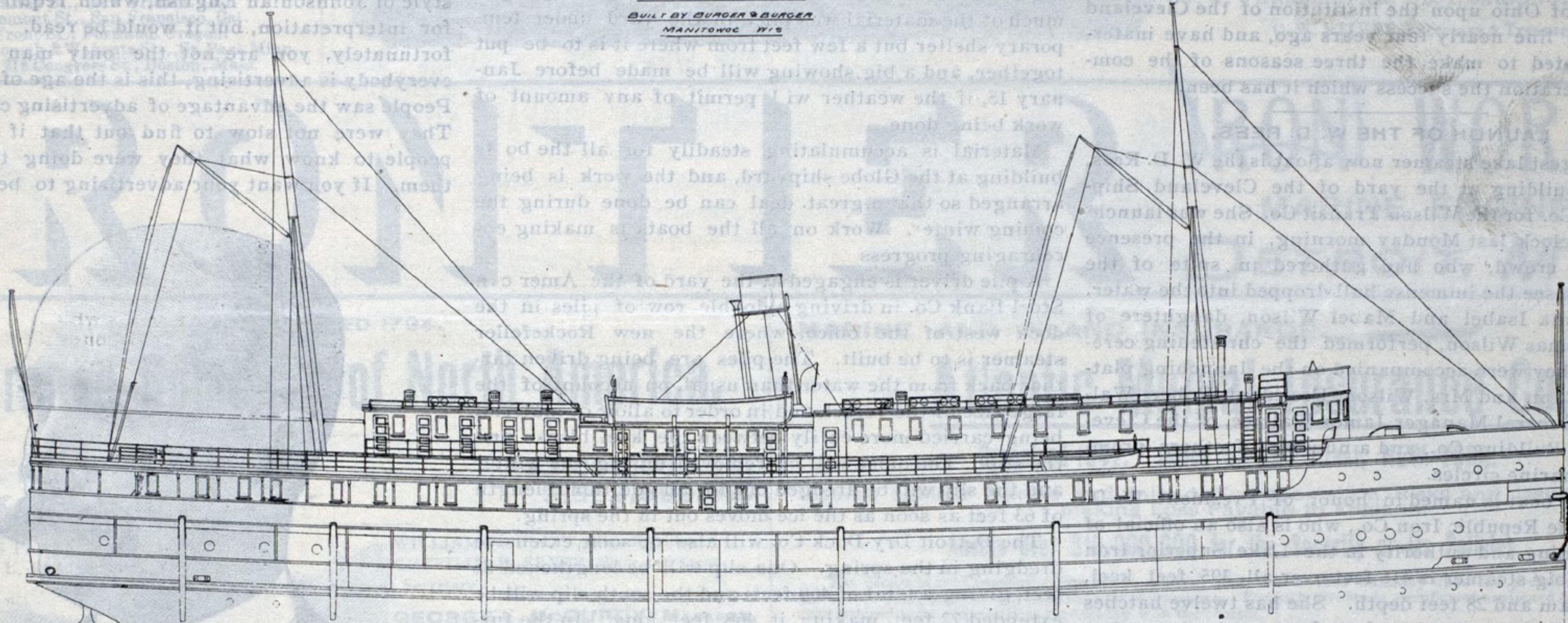
NOTES.

IN view of the statement that a large number of men have been dismissed from the Brooklyn yard since Naval Constructor Bowles was ordered there, Mr. Fisher, M. C. from the fourth New York district, has introduced a resolution in Congress calling for an investigation of the matter by the committee on civil service reform.

SIR CHARLES TUPPER is now at Ottawa conferring with the Canadian premier upon the proposed establishment of a fast line of passenger and mail steamships between West Britain and Canada. The ships would be built especially for this trade, and would be up to date in all points. If the line is established, the steamships will undoubtedly operate between Liverpool and Quebec in summer, landing at Halifax in winter.

AMONG the bills introduced in the United States Senate is one making an appropriation for a wind signal display station on South Manitou Island, in Lake Michigan, similar to the one already in existence on Thunder Bay Island, off Alpena. The construction of a cable from the mainland to the South Manitou would be a part of this plan, and there will be other advantages in the existence of the cable, aside from affording means of communicating weather signals.

PASSENGER SCREW STEAMER
OF
THE GOODRICH TRANS. CO.
215'0" x 29'0" x 12'10"
BUILT BY BURGER & BURGER
MANITOWOC, WIS.



DESIGN PREPARED BY
THE GOODRICH TRANS. CO.
CHICAGO, ILL.
DEC. 1895.

by careful drying. Whatever detergent is applied it should be entirely removed before fresh paint is laid on. Acid is allowable only where it can be thoroughly neutralized with lime water. Faithful brushing with wire brushes is usually sufficient, except where the structure has been long neglected.

FLOTSAM AND JETSAM.

The Big Four Railroad Co. is said to be considering the establishment of a steamship line to operate upon Lake Michigan and possibly on Lake Superior.

The Nickel Plate Railroad Co. has been notified by the Lorain authorities that its drawbridge over the Black River is so narrow that it obstructs the passage of large vessels such as will discharge ore at the Johnson Co.'s docks next season.

Work on the Lake Superior and Ishpeming railway has already begun. About 350 men are at work, and much material is on the ground.

Representatives of the lake region in the House are endeavoring to have the war department inquire into and report upon the possibility of raising the water of the lakes by the construction of dams and locks at the lakes.

The government dredge which is working at Ludington, Mich., had orders to deepen in the harbor to 16 feet, but the citizens wanted 19 feet, and secured orders to that effect, through the exertions of Congressman Bishop.

GOODRICH LINE'S NEW BOAT FOR NEXT SEASON.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD by George F. Stone, Secretary Chicago Board of Trade, December 21, 1895.

CITIES WHERE STORED.	WHEAT, Bushels.	CORN, Bushels.	OATS, Bushels.	RYE, Bushels.	BARLEY, Bushels.
Albany		22,000	155,000		85,000
Baltimore	502,000	1,720,000	198,000	104,000	
Boston	1,197,000	321,000	16,000		
Buffalo	3,368,000	225,000	134,000	482,000	2,558,000
" afloat	259,000	54,000	227,000		416,000
Chicago	21,213,000	1,001,000	530,000	228,000	24,000
" afloat			61,000		
Cincinnati	42,000	2,000	27,000	36,000	79,000
Detroit	865,000	27,000	22,000	13,000	11,000
" afloat					
Duluth and Superior	7,655,000		592,000	137,000	132,000
" afloat	512,000				
Indianapolis	105,000	84,000			
Kansas City	1,446,000	5,000	46,000	29,000	
Milwaukee	879,000			185,000	44,000
" afloat					
Minneapolis	18,319,000	55,000	717,000	149,000	149,000
Montreal	248,000	9,000	135,000	3,000	24,000
New York	8,298,000	861,000	1,811,000	49,000	109,000
" afloat	1,940,000	494,000	364,000		355,000
Oswego	19,000	24,000			149,000
Peoria	65,000	193,000	336,000	1,000	1,000
Philadelphia	546,000	400,000	132,000		
St. Louis	1,391,000	143,000	618,000	13,000	10,000
" afloat		17,000			
Toledo	983,000	124,000	230,000	127,000	
" afloat					
Toronto	46,000		45,000		58,000
On Canal		8,000	12,000		
On Lakes					
On Mississippi					
Grand Total	69,398,000	5,789,000	6,408,000	1,556,000	4,204,000
Corresponding date 1894	89,071,000	8,838,000	9,000,000	452,000	3,306,000

SHIP BUILDING AND REPAIRS.

A NEW GOODRICH STEAMER.

(ILLUSTRATED.)

The RECORD is in receipt, from the Goodrich Transportation Co., of a plan of the outboard elevation of the steamer building at the yard of H. B. & G. B. Burger, Manitowoc, Wis. The full description of this steamer was given in our issue of November 21. The contract for Cabins and all joiner work has just been let to Mr. John Schroeder, of Manitowoc, who built the cabins of the Lake Michigan passenger steamers Indiana and City of Racine.

RAISING THE ITASCA.

Special Correspondence to The Marine Record.

PORT HURON, DECEMBER, 23, 1895.

The Russell Working Co., of Seattle, Washington, are at work raising the schooner Itasca, which was sunk at the Southeast Bend, St. Clair River, by the steamer Parks Fister in October last. They have a new patent which they are trying there they use canvas buoys, 8x12 feet in size. The buoy is perforated so that when it rises to the top of water it will release itself and will not burst like all other buoys that have been tried and

Marine Record.

found wanting. They have been delayed in getting the cargo out and by the large quantities of running ice. Kendall's tug Richardson, of Port Huron, is there to furnish steam to run the compressor, which will pump air into thirty-two of the buoys at once.

The diver began to put the buoys in the vessel on Saturday, December 21, and if nothing happens to delay them the Itasca will be afloat by Monday. They are confident that their buoy system is the only practical process that has ever been tried. It has always been a conundrum how to release the buoy, when they come to the top of water without bursting. No one has yet before got a way of releasing the buoys. No doubt this will prove a success, in every way. The gentlemen who are here are the sole owners of the patent. They are both young men and full of vim, and will make it work if any one can. The Itasca will be towed to Port Huron for repairs. Capt. Charles Chilson is on the ground looking after his interests. No doubt the Itasca is afloat at this writing.

KENDALL

SHIPYARD WORK AT PORT HURON.

The Jenks Ship Building Co. are laying out a new steam barge some larger than the Linden; she will be for the copper trade.

The Tunnel City Boiler Works will build a new boiler for the tug Kittie Haight.

Shipbuilders here and at Marine city are making figures

on rebuilding the tug A. Sumner, or building a new hull for her machinery. The contract has not been let yet.

Parties here have purchased the barge Schilde, formerly the Canadian propeller Canada, and will put machinery in her and make a steambarge of her.

R. J. Cram will give the tug Crosby a first-class rebuild this winter and will raise her eight inches. She will be in fine shape. She and the Jim Pullar will attend to the dredge at the foot of Lake Huron next year.

The shipyard will be very busy this winter rebuilding and docking.

The Kendall Marine Reporting Co. will keep their office open all winter for the boys to have a headquarters.

KENDALL.

LAUNCH OF THE CITY OF BUFFALO.

(CONTINUED FROM PAGE 3.)

when she was on the Lake Huron route of the D. & C. line. Their warm comradeship, together with the geniality and affability of each to the traveling public, gained for them and the boat a fine reputation along the route between Detroit and the Straits. They were separated for a time by the transfer of Mr. McLachlan to the steamer City of Detroit No. 1 (now the City of the Straits), where he speedily extended his list of acquaintances and his popularity. They were united on the State of Ohio upon the institution of the Cleveland & Buffalo line nearly four years ago, and have materially assisted to make the three seasons of the company's operation the success which it has been.

LAUNCH OF THE W. D. REES.

The largest lake steamer now afloat is the W. D. Rees, which is building at the yard of the Cleveland Ship-Building Co. for the Wilson Transit Co. She was launched at 11 o'clock last Monday morning, in the presence of a large crowd, who had gathered in spite of the weather to see the immense hull dropped into the water. Misses Anna Isabel and Mabel Wilson, daughters of Capt. Thomas Wilson, performed the christening ceremony. They were accompanied on the launching platform by Capt. and Mrs. Wilson, President Robert Wallace and General Manager James Wallace, of the Cleveland Ship Building Co., and a number of others prominent in marine circles.

The new boat is named in honor of President W. D. Rees, of the Republic Iron Co., who is also an official of high standing and authority in the Lake Superior Iron Co. The big steamer is 415 feet over all, 395 feet keel, 45 feet beam and 28 feet depth. She has twelve hatches in the spar deck, spaced 24 feet from center to center. The boat is built of Otis open-hearth steel plates and Carnegie steel shapes on what is known as the channel system of construction. She will have the regular barge style of cabins forward and aft, finished on the inside in quarter-sawed oak, with pine ceilings, painted white. She will have the Providence windlass forward, and steam capstan aft, with two dock capstans on the spar deck and a Williamson steering engine forward.

The motive power consists of a triple-expansion engine, having high-pressure cylinder 23 inches diameter, intermediate cylinder 38 inches diameter, low pressure cylinder 63 inches diameter, with a common stroke of 40 inches. Steam will be furnished by two Scotch-type boilers 14 feet in diameter and 13 feet long, allowed 170 pounds steam pressure.

The double bottom is five feet deep and divided into eight compartments, each connected with pipe to a large ballast pump in the engine room. The tank top is made of very heavy plate, with no wood sheathing on top. The steamer is for bulk cargo only, and has no main deck, but heavy main deck beams are in the usual place.

The Rees is classed by none of the outside societies now doing business on the lakes, but her construction has been under the superintendence of Mr. J. R. Oldham, and this, with Capt. Wilson's well-known views on putting in an abundance of strengthening material, and the high reputation of the builders, is a class in itself. The Rees will be commanded next season by Captain Albert M. Sheppard, who sailed the steamer Olympia last season.

NEW WORK.

The contract for the large car transport which the Flint & Pere Marquette Railroad Co., expects to order

has not yet been placed. The uncertainty as to who will get the order is said to be only between the Detroit Dry Dock Co. and F. W. Wheeler & Co., of West Bay City.

The Cleveland Steel Canal-boat Company will soon place its order for three new steamers and ten barges, of the same general dimensions of the initial fleet of this line. Among the bidders are the Union Dry Dock Company of Buffalo, the Globe Iron Works of Cleveland, the Detroit B. at Works, the Craig Ship Building Company of Toledo. Two coast builders, the Harlan and Hollingsworth Co., and Lewis Nixon, are among the lowest bidders, and it is stated on good authority that the last named will get the entire 13 boats to build.

E. W. Heath, of Benton Harbor, has received an order from the Green Dredging Co., of Chicago, to build a new tug which is to cost \$17,000, and to be ready by April 1. She is to be 85 feet long, by 20 feet beam, 11 feet depth and 10 feet draft, and equipped with powerful machinery and steam steering gear.

The Montreal Transportation Co., has sent Capt. Gas-kin, of Kingston, one of its officers, to Great Britain to figure with builders on a steel steamship something larger than the Bannockburn, which was built on the Clyde last year for this company. The new steamer is wanted for the grain carrying trade.

The Cleveland Ship Building Company, having launched the Wilson liner, are rushing the work of laying the keel for the Wolvin freighter "Queen City," much of the material was piled in the yard under temporary shelter but a few feet from where it is to be put together, and a big showing will be made before January 15, if the weather will permit of any amount of work being done.

Material is accumulating steadily for all the boats building at the Globe shipyard, and the work is being arranged so that a great deal can be done during the coming winter. Work on all the boats is making encouraging progress.

A pile driver is engaged at the yard of the American Steel Bank Co. in driving a double row of piles in the dock west of the office, where the new Rockefeller steamer is to be built. The piles are being driven farther back from the water than usual, on account of the large size of the vessel, and in order to allow of material being carried more easily between the keel blocks and the slip. The office will be removed during the winter and the slip will be dredged out for an additional length of 63 feet as soon as the ice moves out in the spring.

The Detroit Dry-Dock Co. will also do some extensive dredging in the spring. One slip will be lengthened 35 feet, giving a total of 460 feet; and the south slip will be extended 72 feet, making it 468 feet long. In the furnace building work is being pushed at relaying the iron floor on which plates and frames are bent, it being necessary to enlarge them. The new boats this company will build for the Rockefeller syndicate will have extra heavy frames, and some new machinery is required. Among these which are now being built are a machine for bending cold these heavy frames, etc.

At F. W. Wheeler's yard the extensions already noted are progressing rapidly, but the yard improvements do not interfere with the work on tonnage under construction. The Roby, Whitney, Mitchell and Eddy boats are well advanced, and no time will be lost in laying the keels for the new Rockefeller boats.

GENERAL REPAIR WORK.

At the Cleveland Dry-Dock the Kearsarge occupied the basin the latter part of last week. She was followed by the Castala, which had several bottom plates taken off.

The steamer Victory is in the larger basin at the Ship Owner's dry-dock to repair a small bottom damage. The Joliet was followed in the south dock by the Wawatam, which received some bottom repairs and in turn gave place to the wooden steamer Wallula, which requires extensive repairs necessitated by hard luck on her last trip.

CHICAGO.—At Miller Brothers' shipyard the steamer John Emory Owen and consort Michigan are having repairs done as fast as the weather permits. The steamer Claribel was in dock for repairs to her stern bearing and some calking. The steamers Portage, R. P. Fitzgerald, Penobscot, J. W. Palmer, Manhattan, and schooner J. C. Fitzpatrick and W. D. Becker are receiving general repairs. The steamers Yakima, Nahant,

and Kaliyuga are having repairs to rail and decks made and decks calked. The steamer W. P. Ketcham is having her decks calked. The steamer Parnell is at the derrick and will have her three masts taken out. Her fore and mainmasts will be converted into pole spars, and her mizzenmast will be dispensed with. She will go into dock for some new bottom plank and a new wheel. The steamer City of Berlin will go into dock for repairs to bottom and stern bearing.

At the Chicago Ship Building Co.'s yard the steamer Fedora is in dock for a new wheel and stern pipe, bottom calking and general repairs. The steamers S. R. Kirby, Sparta, Pontiac and City of Rome are receiving general repairs.

J. J. Keenan, of the Riverside Boiler Works, is doing considerable work on the boilers of the steamers Edward Smith No. 2, New Orleans Alva, City of Cleveland, and C. F. Beilman.

WILLIAMS.

HOW TO CATCH A READER'S EYE.

INDIVIDUALITY AND IDENTITY IN ADVERTISING TWO ELEMENTS ESSENTIAL TO COMPLETE SUCCESS.

If you were the only man advertising you would have a very easy time of it. You could put your advertisement in type discernible only with a microscope or you could put it in type so big that three letters would fill a page; people would read it all the same. It might be in the patois of the Bowery, or it might be in the highest style of Johnsonian English, which required a glossary for interpretation, but it would be read. But, most unfortunately, you are not the only man advertising; everybody is advertising, this is the age of advertising. People saw the advantage of advertising centuries ago. They were not slow to find out that if they wanted people to know what they were doing they must tell them. If you want your advertising to be seen, there-



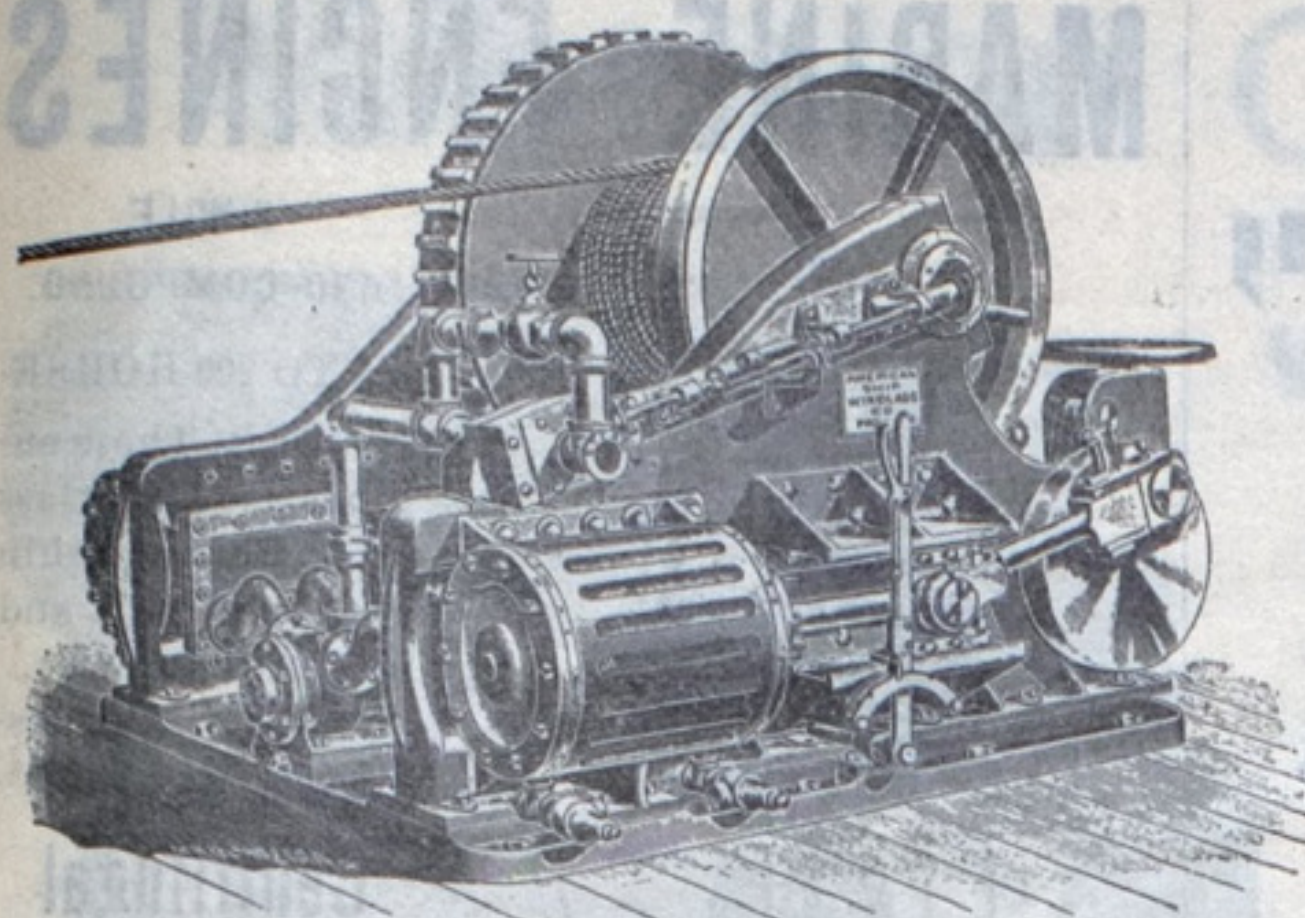
fore, it must be individual—it must be different from the advertising of others, for if you run along in the worn groove, comparatively few people will give you any heed.

The man who wrote the above forgot a very great essential to successful advertising when he failed to tell us the necessity of judicious selection of the medium in which one should place his advertisement, as for instance. I want people to read and learn of my Marine Directory. What particular people? Why, marine men. Hence I go into the columns of the best marine papers with an advertisement; for example, in another column of this paper.

I believe in individuality in advertising and identity. And the placing of a cut of myself herewith is only because all men connected with the lake marine are familiar with this picture, and like you, reader, will stop when they see this cut to learn what is said of or by the publisher of Beeson's Inland Directory, which in this connection, I will state, is now in its tenth edition, and for 1896 will surpass any of its predecessors in merit and extent of its well-known class of contents. Yours sincerely,

HARVEY C. BEESON.

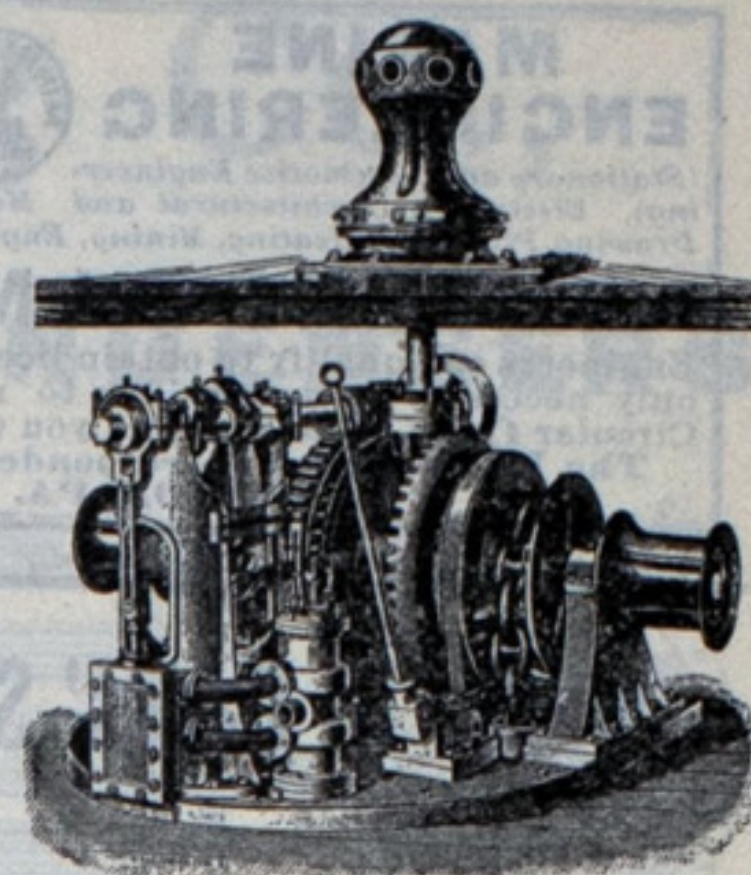
Mr. Walter H. Anning, keeper of the Neebish Range Lights, Hay Lake Channel, was married to Miss Grace E. Wonders, at Detroit, this week.



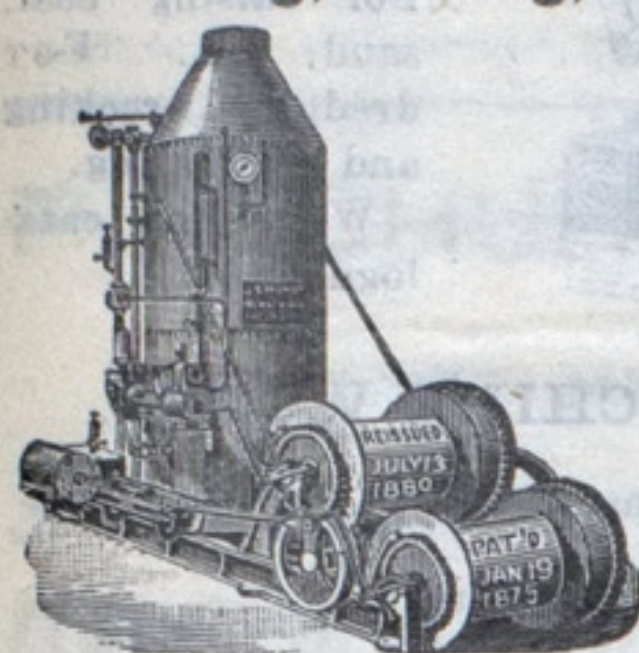
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AMERICAN SHIP WINDLASS Co.,
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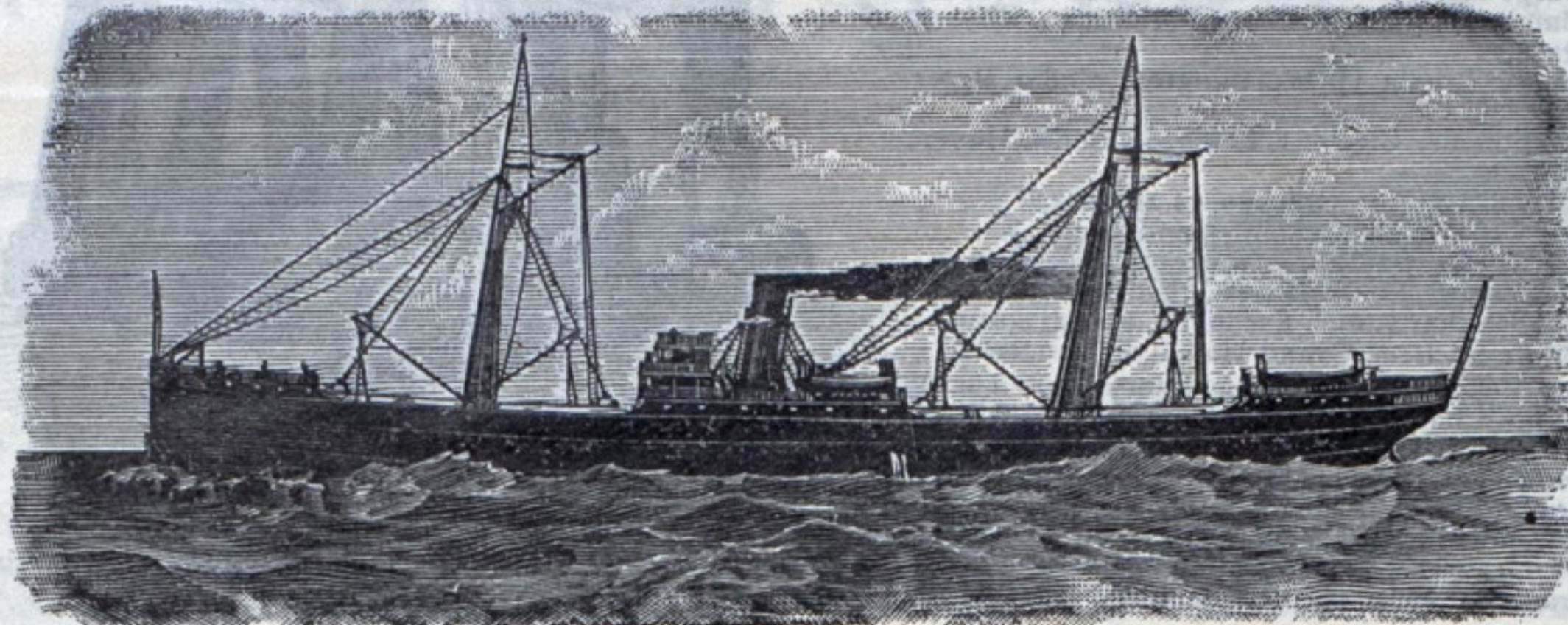


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DETROIT, MICH.

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CAPITAL, PAID UP IN CASH, - - - \$3,000,000.00.
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MARINE AND INLAND INSURANCE.

Atlantic Mutual Insurance Co.,

Organized 1842. Office 51 Wall Street, NEW YORK.

Insures against Marine and Inland Transportation Risks and Issues Policies
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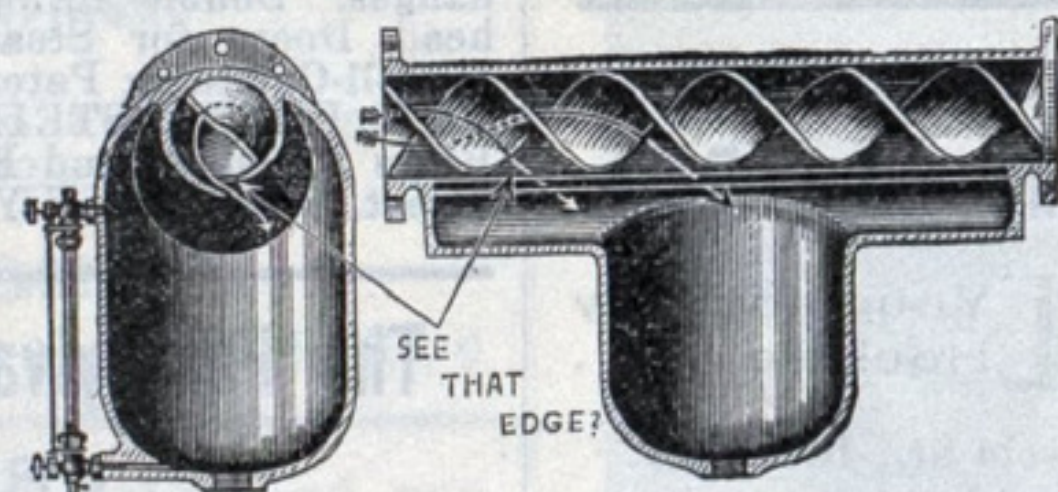
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The profits of the Company revert to the assured, and are divided annually upon the premiums terminated
during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest
until ordered to be redeemed, in accordance with the charter.
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THE INFORMATION IT CONTAINS WILL BE VALUABLE TO YOU.

CHARLES D. MOSHER, - - - No. 1 Broadway, New York.

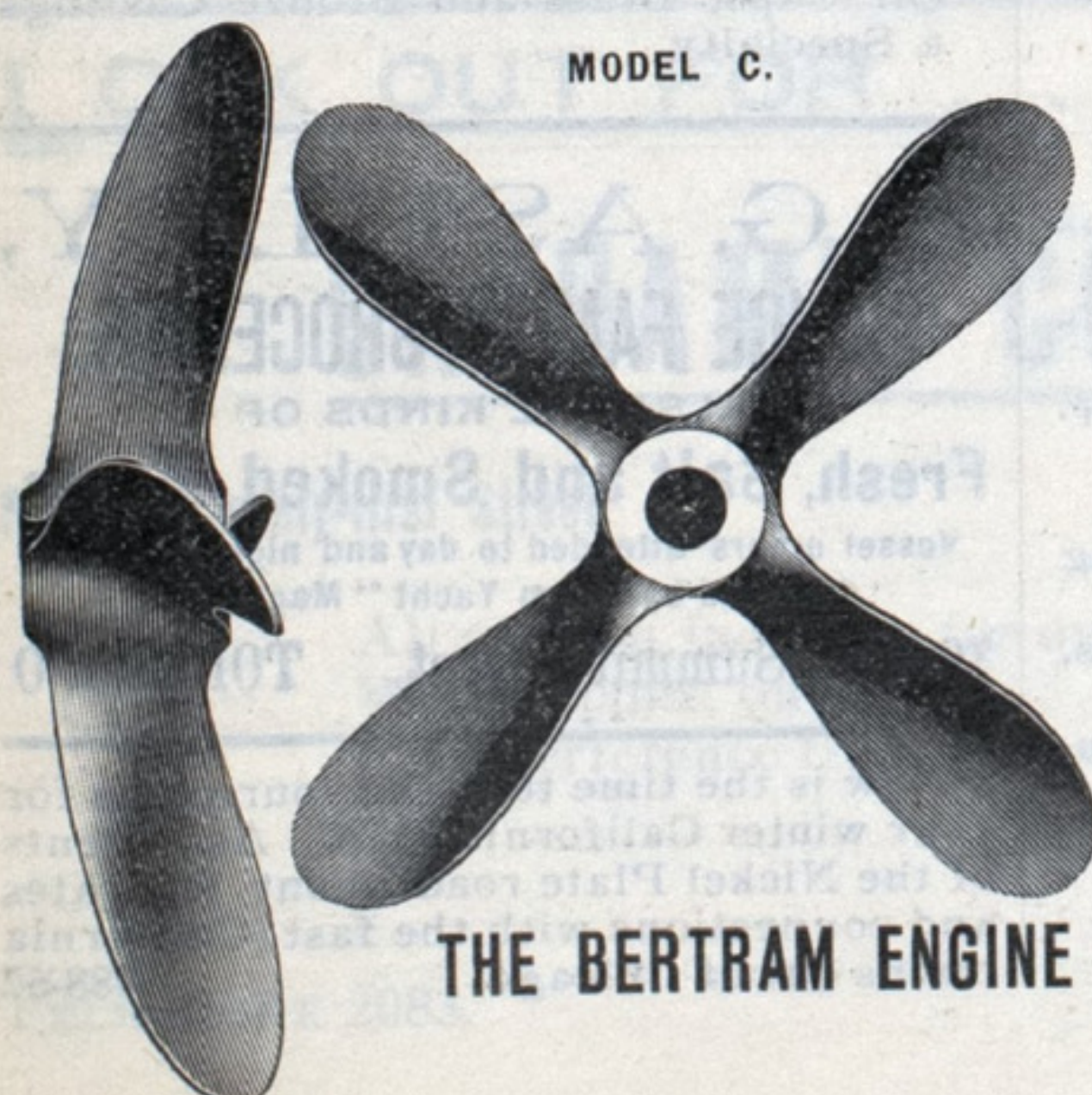


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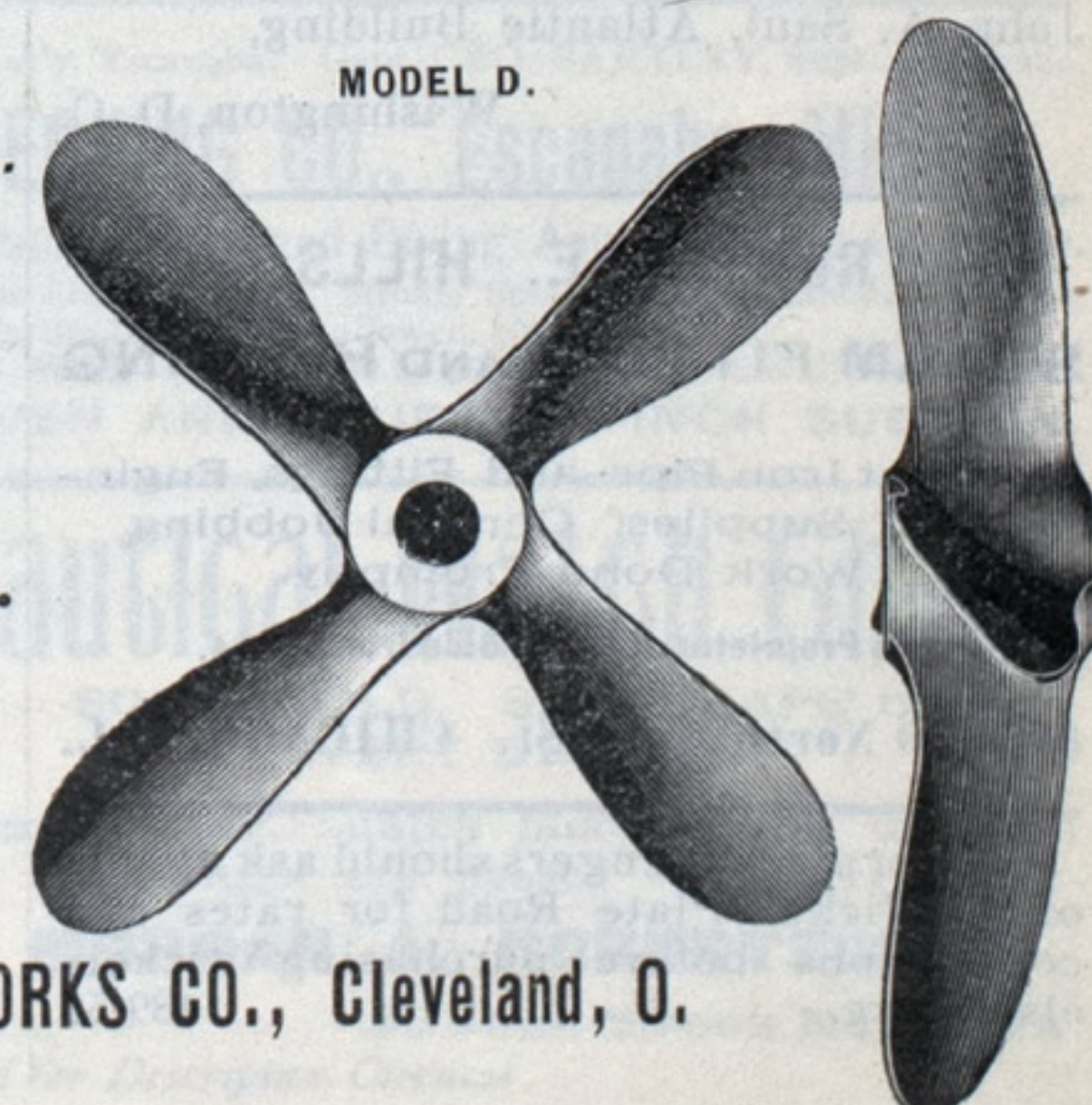
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Fore and Aft Compound Marine Engines.

The Engines in the following boats are of our manufacture.

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It drove out of competition, by sheer force of merit, its only directory competitor as early as 1891.

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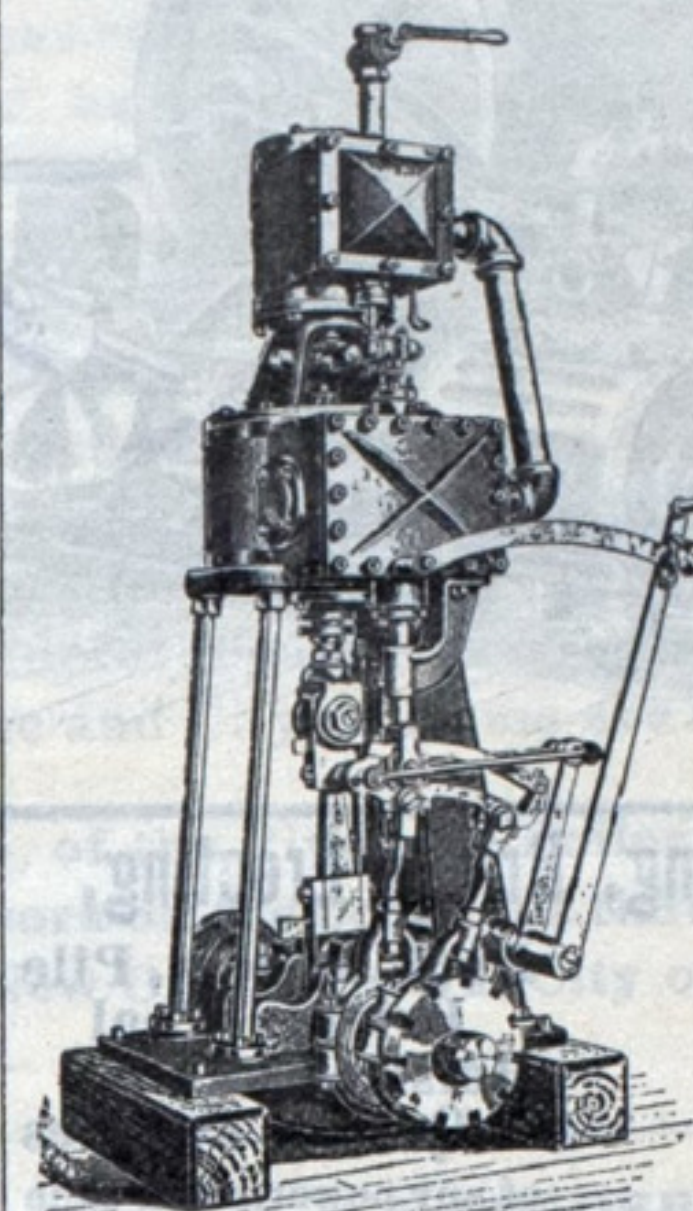
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These engines are high-class in workmanship and material and moderate in price. Send for cuts, description and prices.

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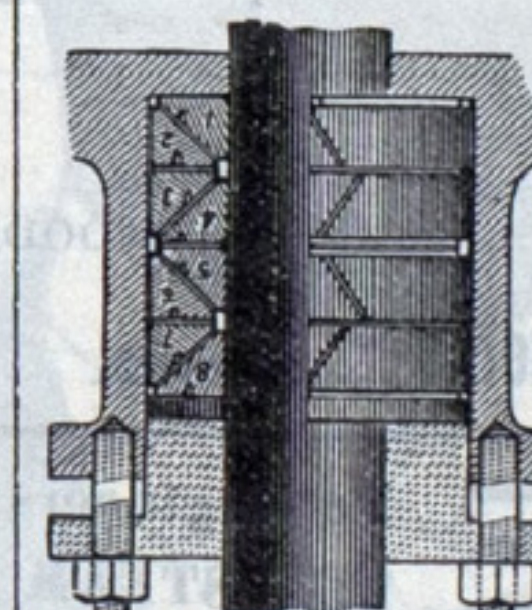
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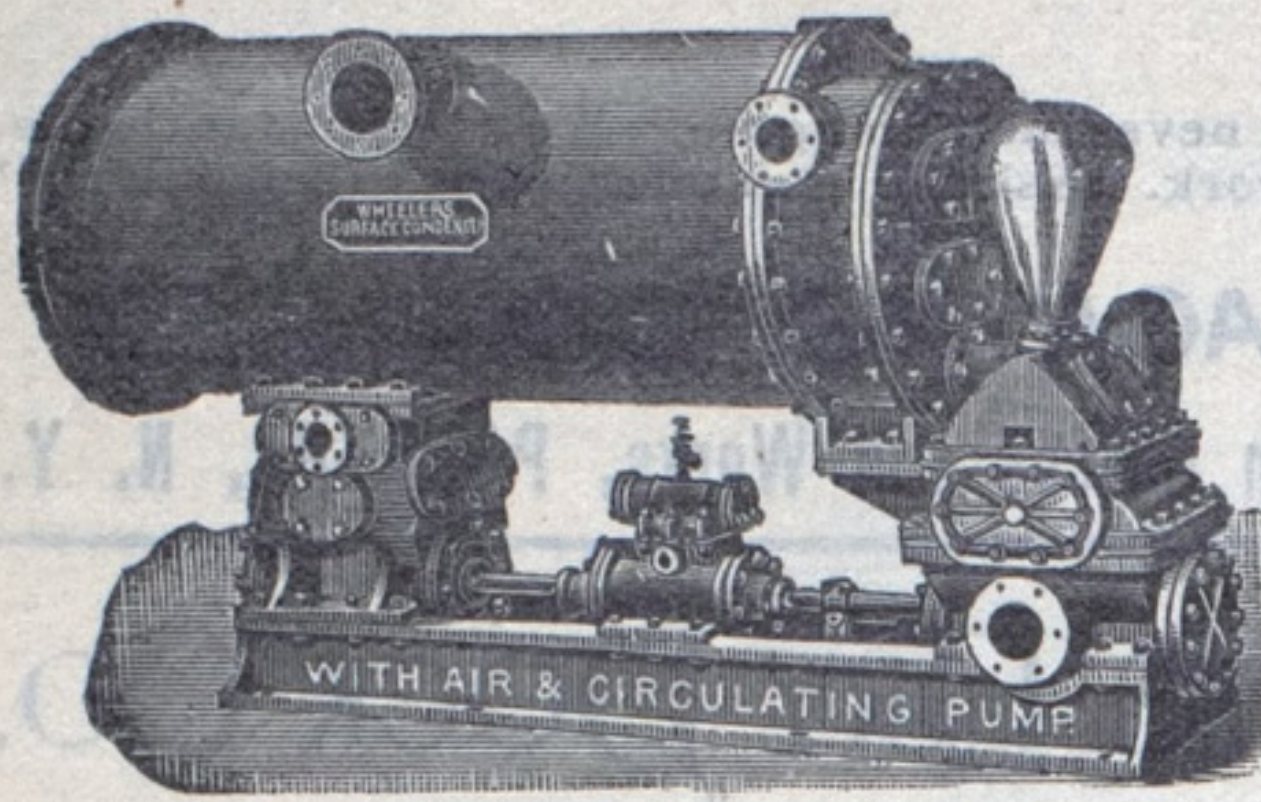
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Wheeler Condenser & Engineering Co.,

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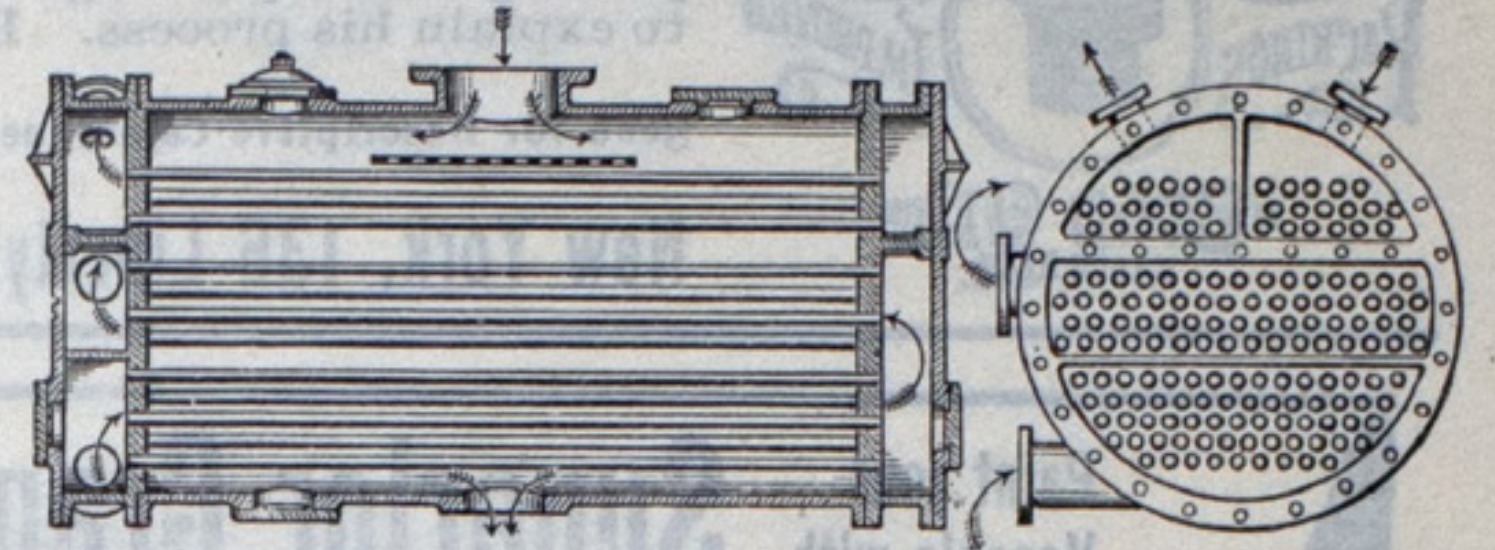
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Mounted upon Combined Air and Circulating Pumps.

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Mounted on Combined Air and Circulating Pumps.

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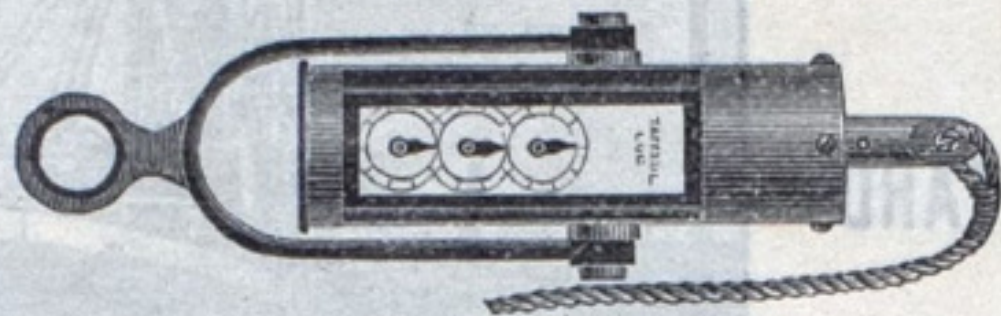
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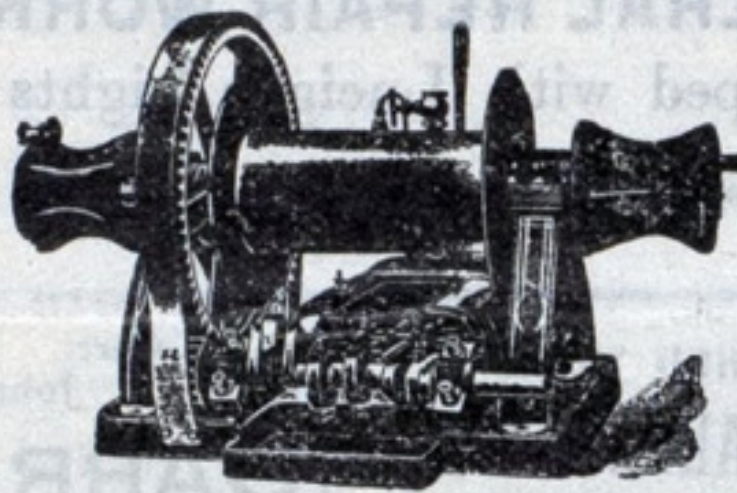
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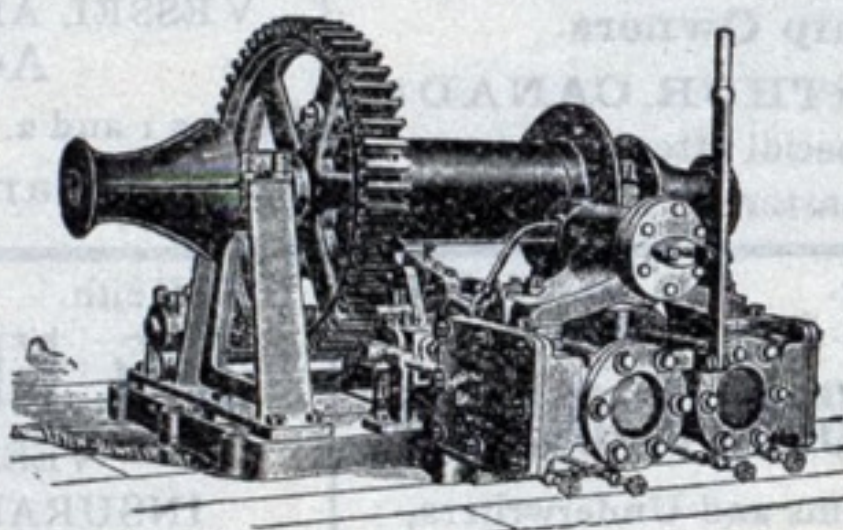
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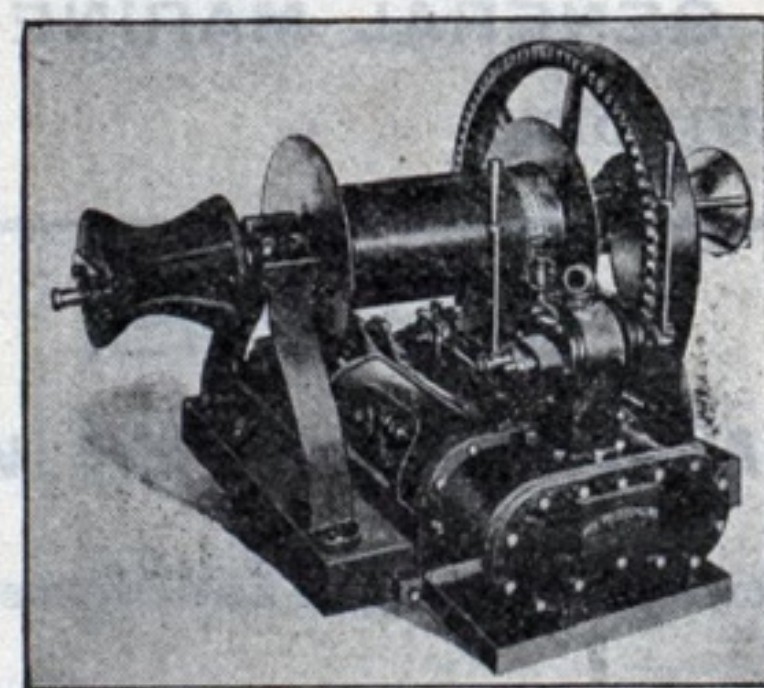


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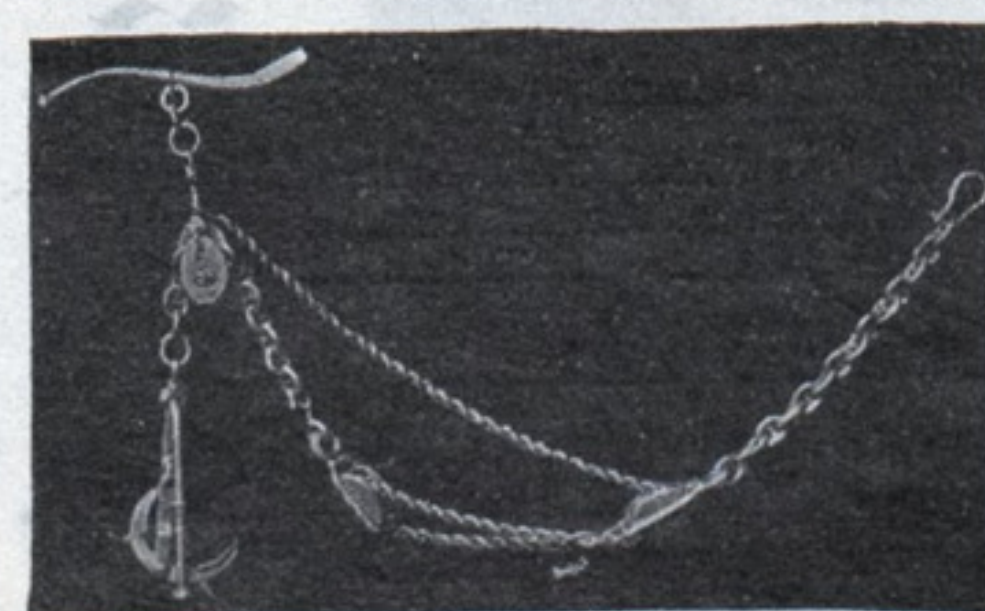
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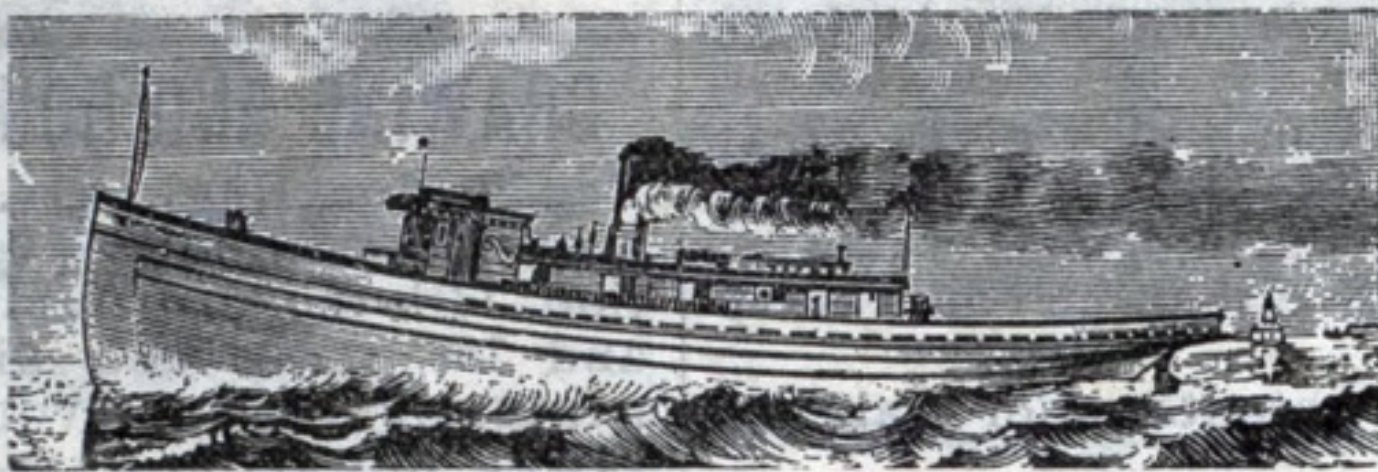
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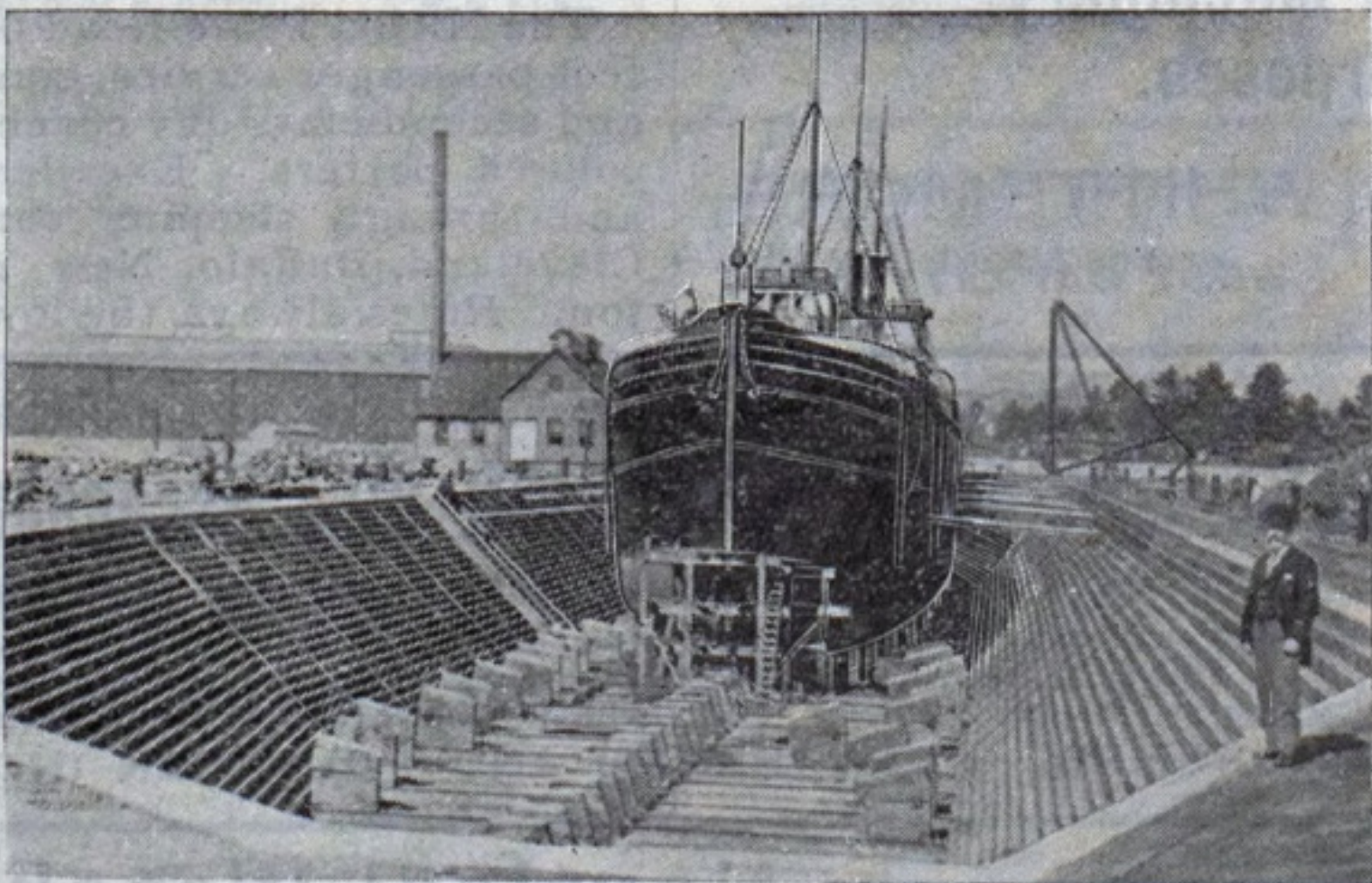
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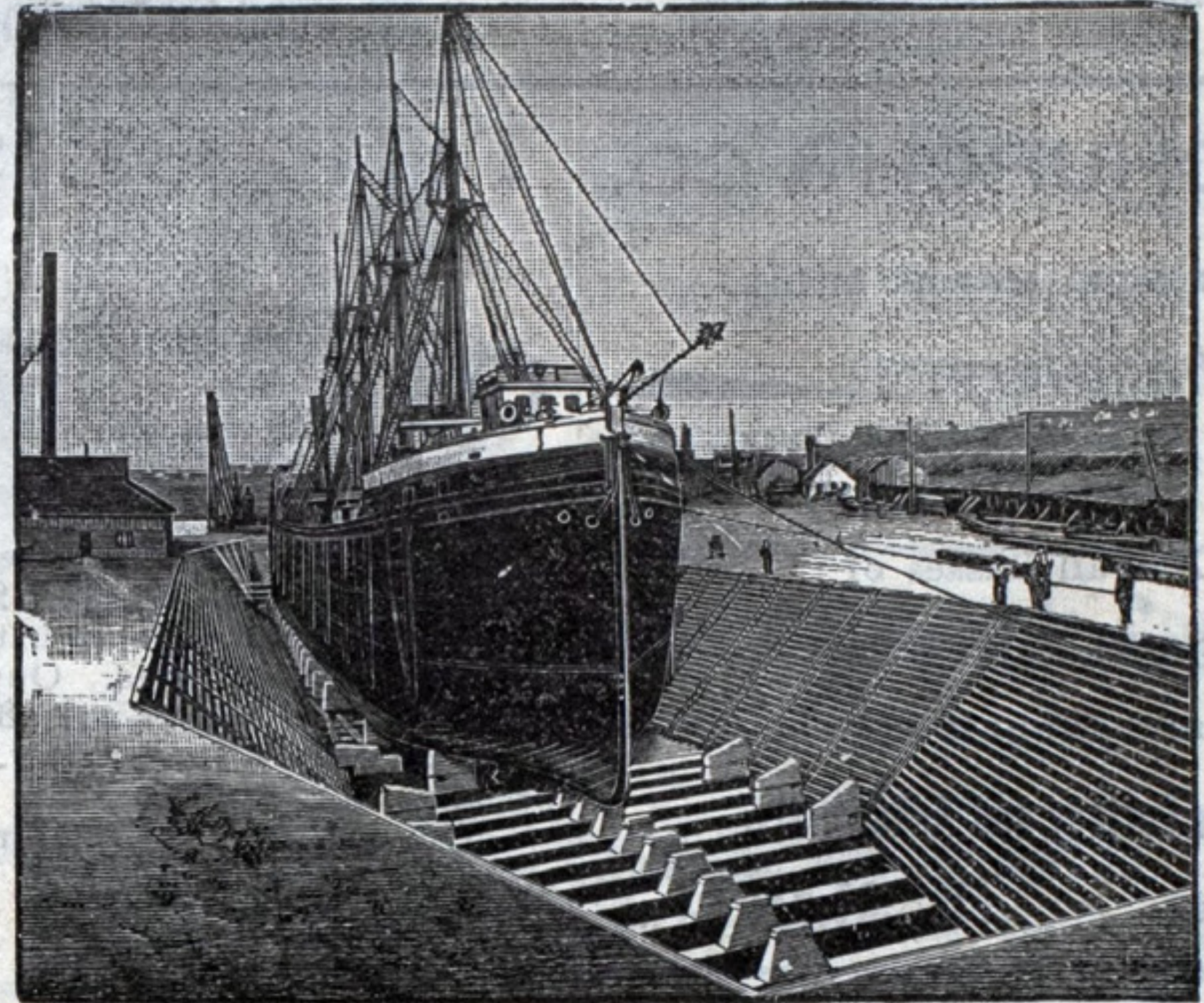
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